

**SMARTDAC+ STANDARD
Hardware Configurator
User's Manual**

Introduction

This manual explains how to use SMARTDAC+ STANDARD Hardware Configurator. To ensure correct use, please read this manual thoroughly before beginning operation.

Notes

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End of document

How to Use This Manual

Structure of the Manual


This manual contains the following five chapters.

Chapter	Title and Description
1	Before Using the Product Provides an overview of Hardware Configurator. It also explains the PC system requirements, how to start the software, the screen configuration, and the menus.
2	Creating Setup Data Explains how to display, create, edit, save, and print setup data as well as how to control the main unit using this software.
3	Connecting to the Main Unit Explains how to receive and send setup data as well as how to control the main unit using this software.
4	Creating Setup Data for GX/GP/GMs with the Advanced Security Function (/AS) Explains how to display, create, edit, and save setup data files (.GSL extension) for GX/GP/GMs with the advanced security function (/AS) as well as how to control the GX/GP/GM from this software.
5	Troubleshooting Provides a list of errors and messages.

Scope of This Manual

This manual does not explain the basic operations of your PC's operating system. For this information, read the Windows user's guide or related materials.

Conventions Used in This Manual

Unit	
K	Denotes 1024. Example: 768K (file size)
k	Denotes 1000.
Notes	
	<i>Improper handling or use can lead to injury to the user or damage to the instrument.</i> This symbol appears on the instrument to indicate that the user must refer to the user's manual for special instructions. The same symbol appears in the corresponding place in the user's manual to identify those instructions. In the manual, the symbol is used in conjunction with the word "WARNING" or "CAUTION."
WARNING	Calls attention to actions or conditions that could cause serious or fatal injury to the user, and precautions that can be taken to prevent such occurrences.
CAUTION	Calls attention to actions or conditions that could cause light injury to the user or cause damage to the instrument or user's data, and precautions that can be taken to prevent such occurrences.
Note	Calls attention to information that is important for the proper operation of the instrument.
Reference Item	
▶	Reference to related operation or explanation is indicated after this mark. Example: ▶ section 4.1
Conventions Used in the Procedural Explanations	
Bold characters	Indicates character strings that appear on the screen. Example: Volt
Procedure	Carry out the procedure according to the step numbers. All procedures are written under the assumption that you are starting operation at the beginning of the procedure, so you may not need to carry out all the steps in a procedure when you are changing the settings.
Explanation	The explanation section describes limitations and related information about the operation.

Images

The images used in this manual may differ from those that actually appear in the software. Such differences do not affect the procedural explanation.

Products That This Manual Covers

Product		Version
Paperless Recorders	GX10-1/GP10-1	Release number 2
	GX20-1/GX20-2	Up to firmware version R2.02.xx.
	GP20-1/GP20-2	In the explanations in this manual, these are referred to as the “Main unit” or “GX/GP.”
Data Acquisition System	GM10-1/GM10-2	Release number 2
		Up to firmware version R2.03.xx
		In the explanations in this manual, these are referred to as the “Main unit” or “GM.”
SMARTDAC+ STANDARD Hardware Configurator		Up to R.2.03.xx

Note: When there is no need to distinguish between GX/GP and GM, "main unit" is used collectively to refer to them.

Revision History

Edition	Software Ver.	Explanation
1	R1.01	New edition
2	R1.02	Modified for version R1.02.xx. Added descriptions for the GX10, GP10, and GP20. Modified system requirements (support for IE9) and added descriptions for the multilingual display feature. Improvements to descriptions.
3	R1.03	Modified for version R1.03.xx. Improvements to descriptions.
4	R2.01	Modified to support setup data for GX/GP firmware version R2.01.xx (release number 2). <ul style="list-style-type: none"> Hardware models GX20-2 and GP20-2, I/O Base Unit (Expandable I/O), and the new mA module, DIO module, and IO module added to GX/GP R2. GX/GP advanced security option (/AS) New menus (Read comparison source, Load Changed Settings, and Validation print window) Modified system requirements (support for Windows 8.1, IE10, and IE11). Modified for functional and user-interface improvements. Improvements to descriptions.
5	R2.02	Modified to support GM10-1/GM10-2. <ul style="list-style-type: none"> Modified to support the GM10 system configuration. Added descriptions for Bluetooth communication and USB communication with the main unit. Added "Reconfiguration" to the description of the main unit operation. Other improvements to descriptions. Modified to support GX/GP firmware version R2.02.01. <ul style="list-style-type: none"> Modified to support the "Pulse" input range for DI module. Added "DARWIN" to the Receiver - Function of the serial communication..
6	R2.03	Modified to support GM firmware version R2.03.01. <ul style="list-style-type: none"> GM advanced security option (/AS) Added descriptions for the communication port detection function that is available when serial communication, USB communication, or Bluetooth communication is selected.

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www.smartdacplus.com/software/en/

Download the latest manuals of the Hardware configurator, and GX/GP from the following

URL: www.smartdacplus.com/manual/en/

Related Manuals

Manual Name	Manual No.
Models GX10/GX20/GP10/GP20 Paperless Recorder First Step Guide	IM 04L51B01-02EN
Models GX10/GX20/GP10/GP20 Paperless Recorder User's Manual	IM 04L51B01-01EN
Models GX10/GX20/GP10/GP20 Advanced Security Function (/AS) User's Manual	IM 04L51B01-05EN
Data Acquisition System GM First Step Guide	IM 04L55B01-02EN
Data Acquisition System GM User's Manual	IM 04L55B01-01EN
Data Acquisition System GM Advanced Security Function (/AS) User's Manual	IM 04L55B01-05EN

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1.1 Overview of Hardware Configurator

1.1.1 Hardware Configurator Features

SMARTDAC+ STANDARD Hardware Configurator is a PC software application for creating setup data for the GX/GP Paperless Recorder and GM Data Acquisition System. You can use it to create, edit, save, and print setup data. You can also use it to exchange data with a GX/GP or GM and control it via communication.

Web-based Offline Application

You can use a Web browser (Internet Explorer) on your PC to create and edit setup data. You only need this software and a browser; you do not have to configure communication parameters.

Creating and Editing Setup Data

You can create new setup data by specifying the model and options. You can also edit existing setup data.

Loading Changed Settings into Setup Data

You can load the settings from a separate file and apply them to the current setup data.

Saving and Loading Setup Data

You can save the data that you create to your PC and load setup files that have been saved on your PC.

Sending and Receiving Setup Data

You can send setup data to and receive data from a main unit via communication.

Printing Setup Data

You can print setup data.

Loading Comparison Source and Validation Printing

You can load a reference setup file and display a window for comparing and verifying the current setup data against the reference. The displayed screen can be printed and used for validation.

* The two sets of setup data that are compared must be of the same system configuration.

Controlling Main Unit

You can start and stop recording or computing on a main unit via communication.

Retrieving Information from Main Unit

You can retrieve information from a main unit via communication.

1.1.2 Installation and Version Updating

Download the latest installer from YOKOGAWA's website to install and update the software. From the **Help** tab, you can view the software version information and access the link to the website.

Note

- Close all other software applications before installing this software.
- To reinstall the software, uninstall the current software first.
- The "Countries/regions except Japan" selection dialog box appears during installation. Select the country that you will use the software in.
- Standard Hardware Configurator uses HTTP port 34443 to communicate with the Web browser. If 34443 is in use, Hardware Configurator will start with an unused port in the range of 34443 to 65535.

1.2 PC System Requirements

1.2.1 Hardware

PC

A PC running Windows Vista, Windows 7 or Windows 8.1.

CPU and Main Memory

PC Configuration	OS	Requirements
CPU	Windows Vista/7/8.1 (32-bit edition)	Intel Pentium 4, 3 GHz or faster x64 or x86 processor.
	Windows 7/8.1 (64-bit edition)	Intel Pentium 4, 3 GHz or faster x64 processor.
Memory	Common	2GB or more.
Hard Disk		Free space of at least 100 MB (depending on the amount of data, you may need more disk space). NTFS recommended.
Mouse		A mouse compatible with the OS.
Display		A display that is compatible with the OS, that has a resolution of 1024×768 or higher, and that can show 65,536 colors (16-bit, high color) or more.
Communication port		Ethernet port compatible with the OS and TCP/IP protocol.
Printer		A printer compatible with your Windows system (a printer driver for the OS is required)

1.2.2 Operating System

OS	Edition
Windows Vista	Home Premium SP2 (excluding 64-bit editions)
	Business Edition SP2 (excluding 64-bit editions)
Windows 7	Home Premium SP1 (32- or 64-bit edition)
	Professional SP1 (32- or 64-bit edition)
Windows 8.1	Basic Edition (32- or 64-bit edition)
	Pro (32- or 64-bit edition)

1.2.3 Web Browser

Compatible Browser	Version
Windows Internet Explorer	IE8, IE9, IE10 and IE11 (Enable HTTP 1.1 and JavaScript.)

Note

- The Web browser that Hardware Configurator uses to display information is limited to Internet Explorer (IE). If IE is not installed on your PC, an error will appear when you start Hardware Configurator.
- Set the zoom level of IE to 100% when using this software.
- IE versions other than the specified versions and other Web browsers are not supported.

1.2.4 Display Languages

Language	System Environment
Japanese	A web browser and an OS support Japanese characters.
English	A web browser and an OS support English characters.
German	A web browser and an OS support German characters.
French	A web browser and an OS support French characters.
Chinese	A web browser and an OS support Simplified Chinese characters.
Russian	A web browser and an OS support Cyrillic characters.
Korean	A web browser and an OS support Korean characters.

1.2.5 Other Operating Conditions

To view the user's manual of this software, you need to use Adobe Reader 7 or later by Adobe Systems (the latest version is recommended).

1.2.6 Security Measures

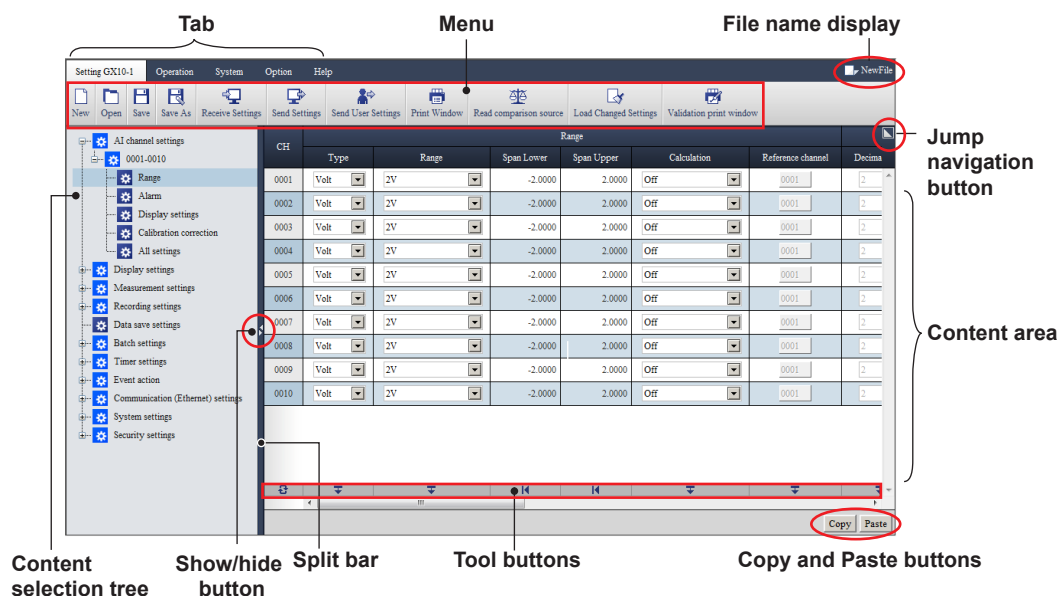
To deal with security threats, we recommend that you take security measures.

- Apply restrictions to PC network connections.
We recommend that you use an isolated network.
- Manage external media properly.
Prevent malware intrusion through external media, unauthorized file operations on external media, and information leakage due to misplacement.
- Set a strong password and manage it properly.
Use a password that is at least eight characters in length, and include three types of characters from uppercase letters, lowercase letters, numbers, and symbols. Change the password regularly.
- Install antivirus software.
This software has been verified to work on a PC running McAfee VirusScan Enterprise Ver. 4.8.0.887.

1.3 Window and Menus

1.3.1 Window and Menu Configuration

Hardware Configurator's menu consists of the tab, menu, and file name display area, as shown below.



Tab and Menu

The menu is tabular. Click a tab to activate it, and the menu will switch accordingly. The following table shows the menu items and their descriptions.

Setting GX10-1	Operation	System	Option	Help
New	Open	Save	Save As	Receive Settings
			Send Settings	Send User Settings
				Print Window
				Read comparison source
				Load Changed Settings
				Validation print window

Tab	Menu	What You Can Do
Setting	New	Create a new setup data file.
GX10-1	Open	Load a setup file from a PC.
GX20-1	Save	Overwrite the file.
GX20-2	Save As	Save a new file to the PC.
GP10-1	Receive Settings	Receive the GX/GP setup data.
GP20-1	Send Settings	Send the current setup data to the GX/GP.
GP20-2	Send User Settings	Send only the user settings to the GX/GP via communication.
GM10-1	Print Window	Open a window used to print setup data.
GM10-2	Read comparison source	Load the comparison source data for comparing the setup data.
	Load Changed Settings	Load the settings from a separate setup file and apply them to the data that is currently displayed.
	Validation print window	Display the window for printing validation information.
Operation	Start Recording	Start GX/GP recording.
	Stop Recording	Stop GX/GP recording.
	Start Computing	Start GX/GP computing.
	Stop Computing	Stop GX/GP computing.
	Hardware Info.	Receive and display the GX/GP status and option information.
	yy	Reconfigure the GM system.
System	System Config.	View and change the system configuration.
	Initialize	Initialize the current setup data.
Option	Display	Specify the display option (Language, Date format, Decimal Point Type) of Hardware Configurator.
	Port No.	Specify the port number of Hardware Configurator.

Tab	Menu	What You Can Do
Help	Instruction Manual	View the user's manual.*
	Version	View the Hardware Configurator version.
	Web to update	Visit the Website to download the latest version of Hardware Configurator.

* If the language displayed in the browser is English, Japanese, or Chinese, the user's manual in the corresponding language will be displayed. If another language is displayed, the English user's manual will be displayed.

File Name Display

The setup file name is displayed in this area.

A specific file name or "New File" will be displayed.

A specific file name will be displayed under the following conditions.

- When a specific file is loaded and displayed.
- When a file is saved using the Save As command.

"New File" will be displayed under the following conditions.

- When Hardware Configurator starts.
- When you click **New**.
- When a connection is established with a main unit and the setup is received.

Content Selection Tree

The content selection tree is used to select the items (edit items) you want to edit.

When you click an item in the content selection tree, the items displayed in the content area (right side) change accordingly.

Content Area

The content area displays setup item details.

It displays the settings for the item selected in the content selection tree.

Immediately after Hardware Configurator starts, this area shows channel settings. If there are no channel settings, this area shows display settings.

Split Bar

You can use the split bar to change the window layout.

Drag the split bar to change the panel width of the content selection tree area and content area. Click the show/hide button in the center to show and hide the content selection tree.

Copy and Paste Buttons

The Copy and Paste buttons are used to copy and paste settings when you edit setup items.

Operation: ► [Copying the Selected Range and Pasting](#)

Jump Navigation Button

You can use this button to jump to the specified setup item.

Operation: ► [Using the Jump Function](#)

Tool Buttons

You can use the tool buttons to collectively edit items according to the function assigned to each button.

Operation: ► [Editing Using Tool Buttons](#)

1.3.2 Menu Operation and Basic Workflow

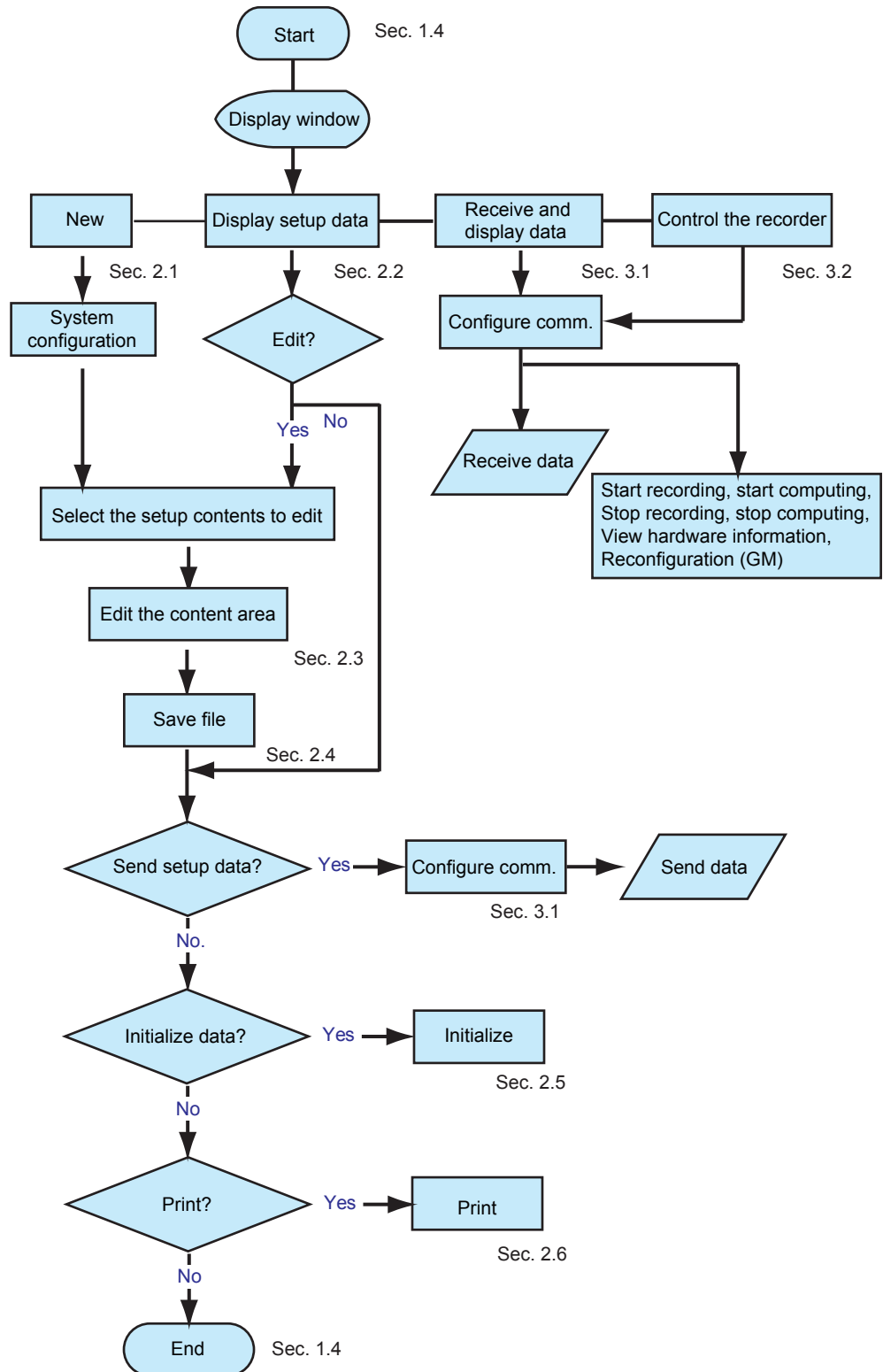
The basic procedure for using Hardware Configurator is shown below.
For more details, see chapter 2, “Creating Setup Data.”

Procedure

- 1** Start Hardware Configurator.
- 2** Click a tab (**Setting**, **Operation**, **System**, or **Option**).
- 3** Select a menu item (**New**, **Open**, **Start Recording**, **Stop Recording**, etc.).
- 4** Perform operations in the displayed dialog box.
- 5** To edit settings, select a title in the content selection tree. Edit the displayed settings.
- 6** Process the setup data file that you created or edited by selecting appropriate commands (**Save**, **Send Settings**, etc.) from the tab and menu.
- 7** Close Hardware Configurator.

1.3.3 Workflow

The features and workflow of Hardware Configurator are illustrated below.



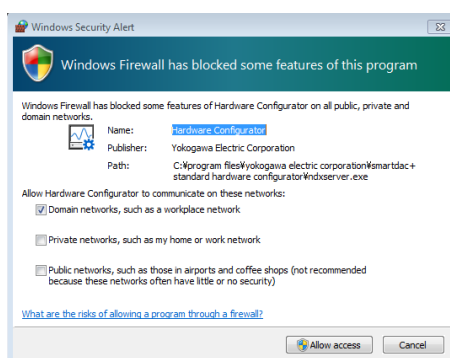
1.4 Starting and Closing Hardware Configurator

1.4.1 Starting the Software

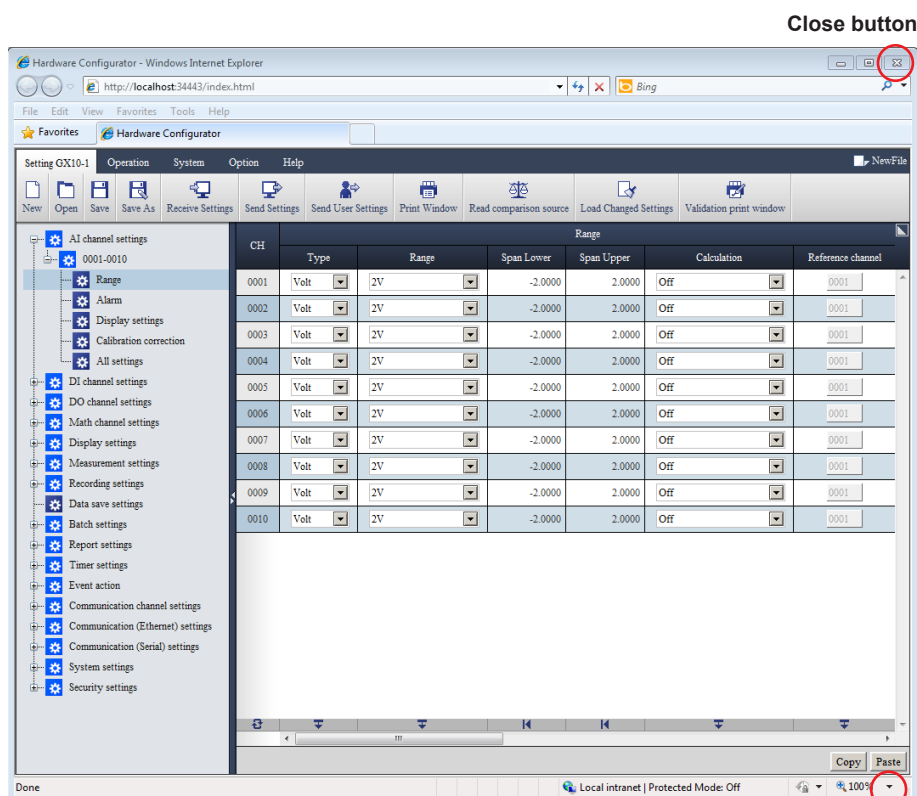
Procedure

- 1 From the **Start** menu, select **All Programs - SMARTDAC+ STANDARD - Hardware Configurator**.

The first time Hardware Configurator starts after installation, the Windows Security Alert dialog box appears (the figure below is the Windows 7 screen capture). Click “Allow access.”



Hardware Configurator starts, and the following window appears.



Zoom Level button

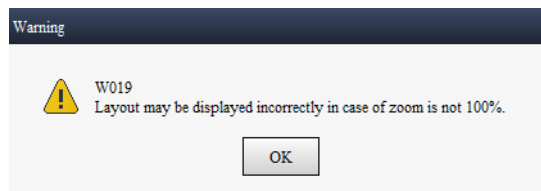
Note

- Hardware Configurator will not start if Internet Explorer is not installed.
- The default settings are the system configuration of the GX10.

Internet Explorer Zoom Level

Set the IE zoom level (on the **View** menu, or in the lower-right corner) to 100%. Otherwise, the layout may appear crooked.

If the following message appears when you start the software, click OK. Then, on the **View** menu of IE, click **Zoom** (or **Change the zoom level** at the lower right of the window) to select 100%.



System Configuration on the First Startup

The following table shows the system configuration (**System** tab > **System Config**) that is used the first time the software is started. Before creating a setup file, use **System Config** to align the software configuration with the GX/GP configuration.

Details on system configuration: ► [2.1 Creating New Setup Data](#)

Item	Value
Model	GX10/GP10
Version	(The most recent version will be displayed.)
Module	AI module
Option	No options

Running Multiple Instances

You can run multiple instances of this software (version R2.01.01 and later).

To do so, repeat step 1 on the previous page.

The first instance starts with the port number that was in use when the software was closed the previous time.

The subsequent instances start with unused ports in the range of 34443 to 65535.

Note

To change the port number to a different number after starting the software, follow the procedure in [1.4.3 Specifying the HTTP port number](#).

1.4.2 Setting the Display Language, Date Format, and Decimal Point Type

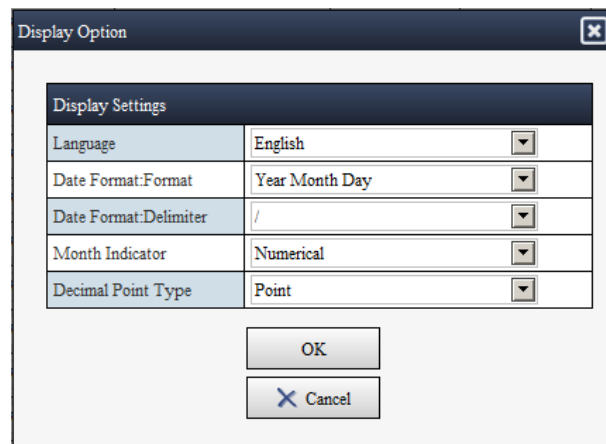
You can set the display language to English, Japanese, German, French, Chinese, Russian or Korean. In addition, you can select the date format and decimal point type for printing according to the selected language.

Procedure

- 1 Click **Option** tab.
- 2 Click **Display**.



The Display Option dialog box appears.



- 3 Click **Language** arrow, and select from the list.
- 4 If necessary, select the **Date Format** and **Decimal Point Type**. The available options are shown in the following table.

Item	Available Format
Date Format: Format	[Month Day Year] [Year Month Day] [Day Month Year]
Date Format: Delimiter	[/] (Slash), [.] (Period) [-] (Dash)
Month Indicator	[Numerical] [Characters]
Decimal Point Type	[Point] [Comma]

- 5 Click **OK**.

Note

- The Date Format and the Decimal Point Type are applied only to the Print window and Validation print window.
- If Language is set to Japanese, Korean, or Chinese, Month Indicator is fixed to Numerical.

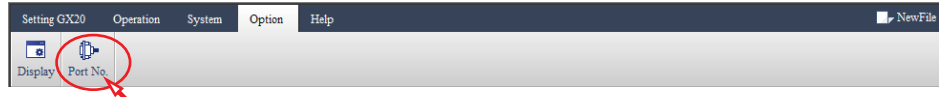
1.4.3 Specifying the HTTP port number

You can specify the HTTP port number for using the Web browser from this software.
The default HTTP port number is 34443. To change the port number to a different number, follow the procedure below.

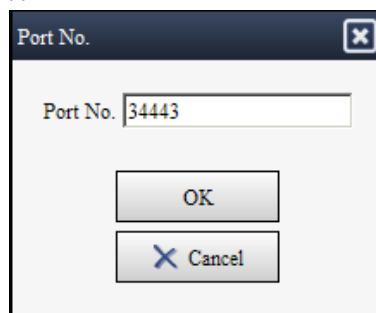
Procedure

1 Click **Option** tab.

2 Click **Port No.**



The Port No. dialog box appears.



3 Enter the port number (in the range of 34443 to 65535).

Note

To activate the new port number, restart the software.

The software will continue to use the old port number until you restart the software.

1.4.4 Closing the Software

Procedure

1 Close Internet Explorer by clicking the **Close** button or by clicking **Exit** on the **File** menu.

Note

If you change the setup data, the changes are stored and will appear the next time you start the software.

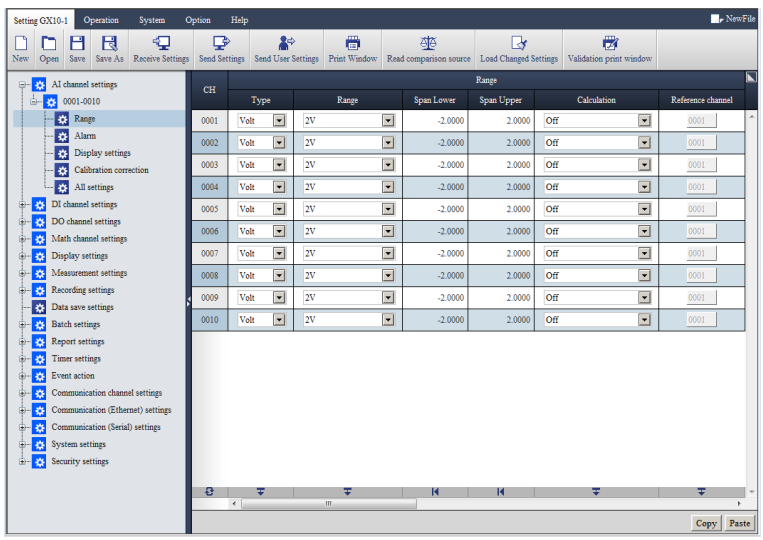
2.1 Creating New Setup Data

2.1.1 Creating a New File

This section explains how to use SMARTDAC+ STANDARD Hardware Configurator to create a new data file for configuring various GX/GP functions.

Procedure

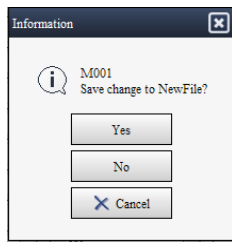
- 1 Start Hardware Configurator.
The setup window appears.



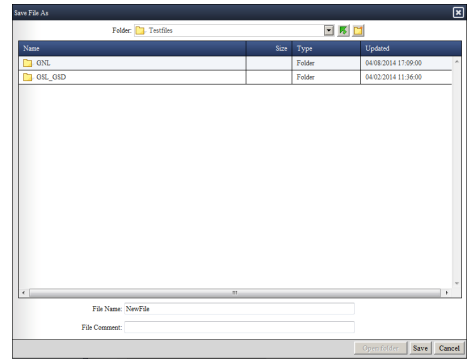
- 2 Click **Setting** tab and then **New**.



If a setup file is already displayed, a confirmation message is displayed that asks whether you want to save the file.



- 3 To save the file, click **Yes**; otherwise, click **No**.
If you click **Yes**, a dialog box for saving the file (see the figure below) appears.
How to save files: ► [2.4 Saving Setup Data](#)

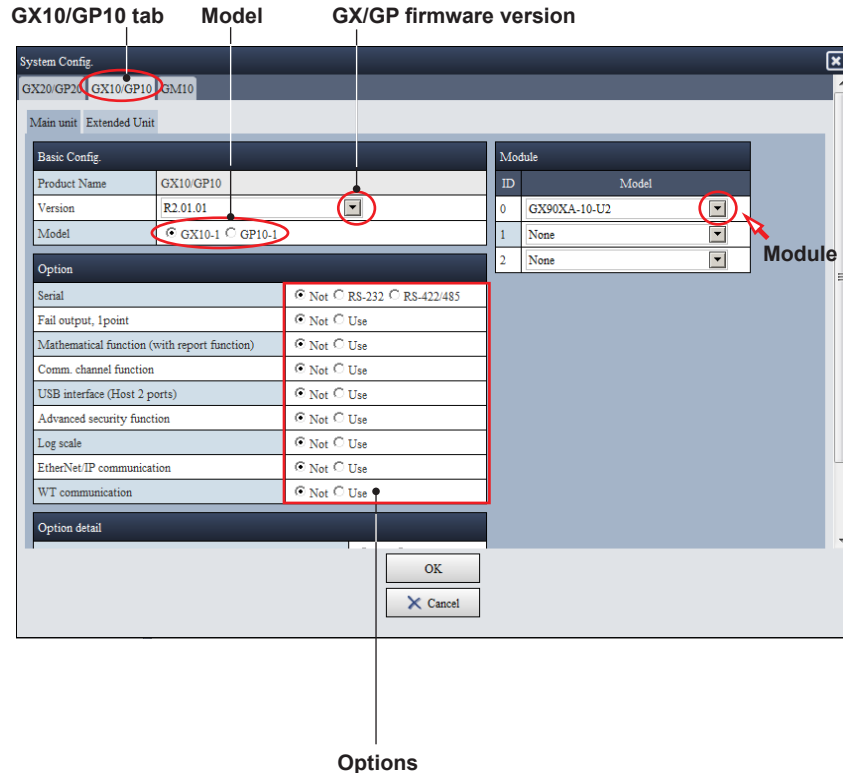


If you select **No**, the System Config. dialog box, shown in step 4, appears.

Note

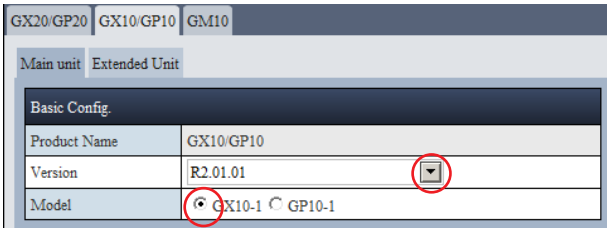
If you change the system configuration, the setup items that you have edited up to that point will be initialized. To save these items, click **Yes** in step 2.

- 4 Set the system configuration for GX/GP main unit.



- 5 Click the **GX10/GP10**, **GX20/GP20**, or **GM10** tab depending on the main unit that you are using.

- 6 Under **Basic Config.**, set the **Product Name**, **Version**, and **Model**.



The following table shows the **Basic Config.** settings of each tab page.

Tab	Item	Displayed value	Initial value
GX10/GP10	Product Name	GX10/GP10	Not editable
	Version	R2.02.01, R2.01.01, R1.03.01, R1.02.01, R1.01.01	R2.02.01
	Model	GX10-1, GP10-1	GX10-1
GX20/GP20	Product Name	GX20/GP20	GX20/GP20
	Version	R2.02.01, R2.01.01, R1.03.01, R1.02.01, R1.01.01	R2.02.01
	Model	GX20-1, GX20-2, GP20-1, GP20-2	GX20-1
GM10	Product Name	GM10	GM10
	Version	R2.03.01, R2.02.01	R2.03.01
	Model	GM10-1, GM10-2	GM10-1

7 Set the items under **Option**.

Option	
Serial	<input checked="" type="radio"/> Not <input type="radio"/> RS-232 <input type="radio"/> RS-422/485
Fail output, 1 point	<input checked="" type="radio"/> Not <input type="radio"/> Use
Mathematical function (with report function)	<input checked="" type="radio"/> Not <input type="radio"/> Use
Comm. channel function	<input checked="" type="radio"/> Not <input type="radio"/> Use
USB interface (Host 2 ports)	<input checked="" type="radio"/> Not <input type="radio"/> Use
Advanced security function	<input checked="" type="radio"/> Not <input type="radio"/> Use
Log scale	<input checked="" type="radio"/> Not <input type="radio"/> Use
EtherNet/IP communication	<input checked="" type="radio"/> Not <input type="radio"/> Use
WT communication	<input checked="" type="radio"/> Not <input type="radio"/> Use

The types of options that appear vary depending on the main unit and the firmware version. The following table shows the available options for different firmware versions.

Option	GX/GP		GM	
	Initial value	Firmware Version and Availability	Initial value	Firmware Version and Availability
Serial	Not	Displayed on R1.01.01 or later.	Not	Displayed on R2.02.01 or later.
Fail output, 1 point	Not	Displayed on R1.01.01 or later.	Diagonal lines mean that the main unit does not have those options.	
Mathematical function (with report function)	Not	Displayed on R1.01.01 or later.		
Comm. channel function	Not	Displayed for R1.01.01 and later. For R2.01.01 and later, this option is fixed to Use when WT communication or EtherNet/IP communication is set to Use.	Not	Displayed for R2.02.01 and later. This option is fixed to Use when WT communication or EtherNet/IP communication is set to Use.
USB interface (Host 2 ports)	Not	Displayed on R1.01.01 or later.	Diagonal lines mean that the main unit does not have those options.	
Advanced security function (Part 11)	Not	Displayed on R2.01.01 or later.		
Log scale	Not	Displayed on R2.01.01 or later.	Not	Displayed on R2.02.01 or later.
EtherNet/IP communication	Not	Displayed on R2.01.01 or later.	Not	Displayed on R2.02.01 or later.
WT communication	Not	Displayed on R2.01.01 or later.	Not	Displayed on R2.02.01 or later.
Bluetooth	Diagonal lines mean that the main unit does not have those options.		Not	Displayed on R2.02.01 or later.

Diagonal lines mean that the main unit does not have those options.

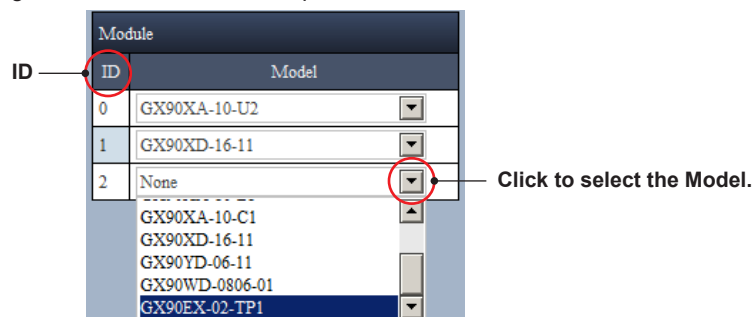
Note

Advanced security function corresponds to the GX/GP/GM's advanced security function (/AS). If you select Use, select Off or On under Option detail.

Option detail	
Advanced security function	On/Off <input type="radio"/> Off <input type="radio"/> On

8 Set the items under **Module**. Select IO modules.

The figure below shows an example of the GX10/GP10 tab.



Tab	Number of Displayed IDs (Slot Numbers)	Model
GX10/GP10	0 to 2	Selectable modules are displayed depending on the Version of the main unit (see the separate table).
GX20/GP20	0 to 9	
GM10	0 to 9	

2.1 Creating New Setup Data

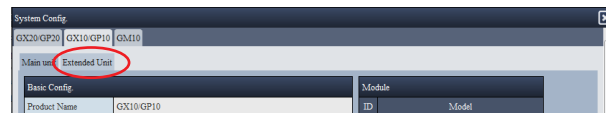
When an IO expansion module (GX90EX-02-TP1) is in use

- GX10/GP10 can only be set for ID = 2.
- GX20/GP20 can only be set for ID = 9.
- GM10 can be set to any ID from 0 to 6. However, other modules cannot be set after the IO expansion module. (IO expansion modules do not appear in the selection list for ID = 7 to 9.)

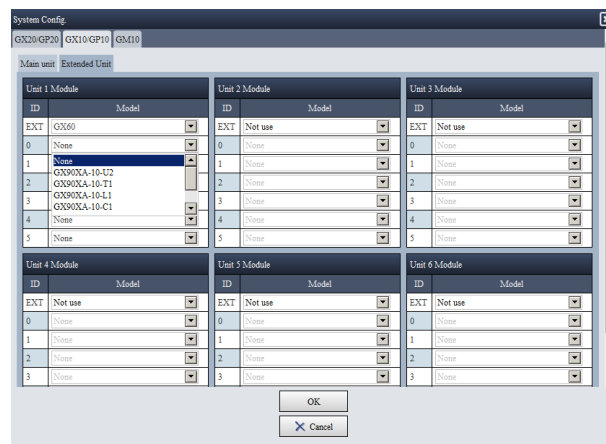
The **Model** of each module is displayed according to the main unit **Version**. For a list of available IO module names, see the table below.

Module	Firmware version		Description
	GX/GP	GM	
None	R1.01.01 or later.	R2.02.01 or later.	No module is attached.
GX90XA-10-U2	R1.01.01 or later.	R2.02.01 or later.	AI module (Universal)
GX90XA-10-T1	R1.03.01 or later.	R2.02.01 or later.	AI module (Electromagnetic relay)
GX90XA-10-C1	R2.01.01 or later.	R2.02.01 or later.	AI module (Current)
GX90XA-10-L1	R2.01.01 or later.	R2.02.01 or later.	AI module (Low voltage type)
GX90XD-16-11	R1.01.01 or later.	R2.02.01 or later.	DI module
GX90YD-06-11	R1.01.01 or later.	R2.02.01 or later.	DO module
GX90WD-0806-01	R2.01.01 or later.	R2.02.01 or later.	DIO module
GX90EX-02-TP1	R2.01.01 or later.	R2.02.01 or later.	I/O expansion module

- 9** If an I/O base unit is installed, configure the modules. Click **Extended Unit** to display the page. The **Extended Unit** tab is to the right of the **Main Unit** tab.



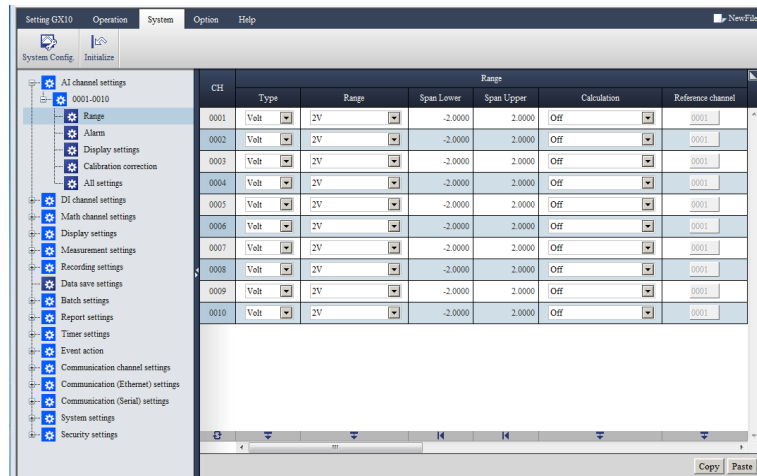
- 10** Select the module configuration from Unit1 to Unit6 under **Extended Unit**.



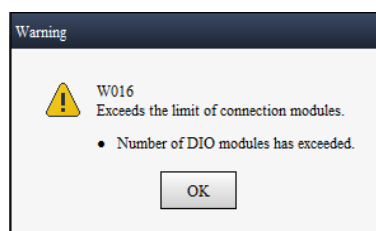
The following table shows the available models. If the IO expansion module is not set to the main unit (Module on the Main unit tab), the item will be unselectable.

ID	Module	Initial value	Description
EXT	GX60/Not use or GX90EX-02-TP1/Not use	Not use	Base unit model (fixed) Displays "GX90EX-02-TP1" on the GM tab.
0 - 5	None	None	Installed module
	GX90XA-10-U2		
	GX90XA-10-T1		
	GX90XA-10-C1		
	GX90XA-10-L1		
	GX90XD-16-11		
	GX90YD-06-11		
	GX90EX-02-TP1		

- 11** After you set the items, click **OK**.
The system configuration is loaded, and setup items based on the configuration are created.



However, if the number of modules exceeds the limit, the following warning will appear. Correct the module settings according to the auxiliary message.



Limit to the number of modules and number of channels: ► [Module Configuration Limitations](#)
Message details: ► ["Warning Messages"](#) and ["W016 Auxiliary Messages"](#)

- 12** Edit the setup items in the new window to create the setup data.

How to edit setup items: ► [2.3 Editing Setup Data](#)

Explanation**Module Configuration Limitations**

In the Module settings of the Main unit and Extended Unit tabs, select modules so that the following limits are not exceeded. If you click **OK** when a limit is exceeded, a message will appear. If a message appears, correct the number of modules or channels specified by the message.

Message details: ► [“Warning Messages”](#) and [“W016 Auxiliary Messages”](#)

Limit to the number of IO modules in the entire system

Model	Limitation
GX10-1	Up to 10 IO modules in the entire system
GP10-1	
GX20-1	
GP20-1	
GX20-2	Up to 45 IO modules in the entire system
GP20-2	
GM10-1	Up to 10 IO modules in the entire system
GM10-2	Up to 42 IO modules in the entire system

Limit to the number of DO/DIO modules in the entire system

Model	Limitation
GX10-1	Up to 10 DO/DIO modules in the entire system
GP10-1	
GX20-1	
GP20-1	
GX20-2	
GP20-2	
GM10-1	
GM10-2	

Limit to the number of IO channels in the entire system

Model	Limitation
GX10-1	Up to 100 IO channels in the entire system
GP10-1	
GX20-1	
GP20-1	
GX20-2	Up to 500 IO channels in the entire system
GP20-2	
GM10-1	Up to 100 IO channels in the entire system
GM10-2	Up to 500 IO channels in the entire system

Note

- “In the entire system” means the total number of modules or the total number of channels specified on the Main unit and Extended Unit tabs of this software.
- The number of channels per module is as follows:
 - AI module (GX90XA): 10 channels
 - DI module (GX90XD): 16 channels
 - DO module (GX90YD): 6 channels
 - DIO module (GX90XA): 8 input channels, 6 output channels

Limit to the IO expansion module (GX90EX-02-TP1) of the main unit

Model	Limitation
GX10-1	On the Main unit tab, the module can only be set to ID = 2.
GP10-1	
GX20-1	On the Main unit tab, the module can only be set to ID = 9.
GP20-1	
GX20-2	
GP20-2	
GM10-1	On the Main unit tab, a single module can be set in the range ID = 0 to 6. IO expansion modules do not appear in the selection list for 7 to 9.
GM10-2	In addition, the ID to which an IO expansion module is assigned is considered to be the end, and other modules cannot be set to later IDs.

Limit to the EMR module (GX90XA-10-T1) of the main unit

Model	Limitation
GX10-1	No limit. EMR modules can be set to any ID.
GP10-1	
GX20-1	
GP20-1	
GX20-2	
GP20-2	
GM10-1	On the Main unit tab, a module can be set in the range ID = 0 to 7. EMR modules do not appear in the selection list for 8 or 9.
GM10-2	In addition, only up to eight modules including an EMR module can be set.

Note

“Module of the main unit” means the total number of modules specified on the Main unit tab of this software.

Limit to the number of DIO modules of each unit

Model	Limitation
GX10-1	A single DIO module per unit.
GP10-1	
GX20-1	
GP20-1	
GX20-2	
GP20-2	
GM10-1	
GM10-2	

Limit to the number of IO channels of each unit

Model	Limitation
GX10-1	Up to 100 channels per unit.
GP10-1	
GX20-1	
GP20-1	
GX20-2	
GP20-2	
GM10-1	
GM10-2	

Note

- “A unit” refers to the main unit or an extended unit.
- The number of channels per module is as follows:
AI module (GX90XA): 10 channels
DI module (GX90XD): 16 channels
DO module (GX90YD): 6 channels
DIO module (GX90XA): 8 input channels, 6 output channels

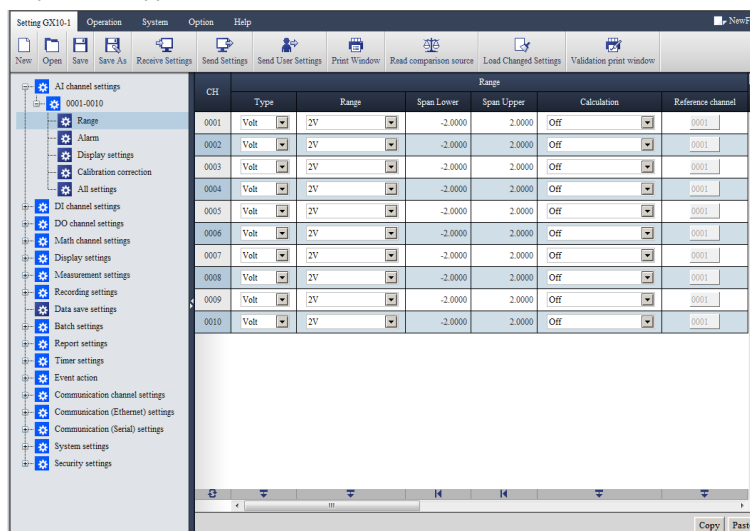
2.2 Displaying Setup Data

2.2.1 Opening a File

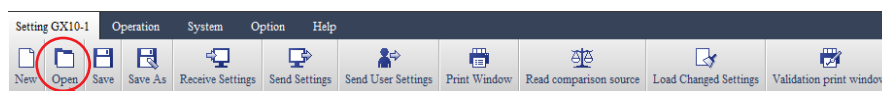
This section explains how to load and display an existing setup data file that has been saved to a PC.

Procedure

- 1 Start Hardware Configurator.
The setup window appears.

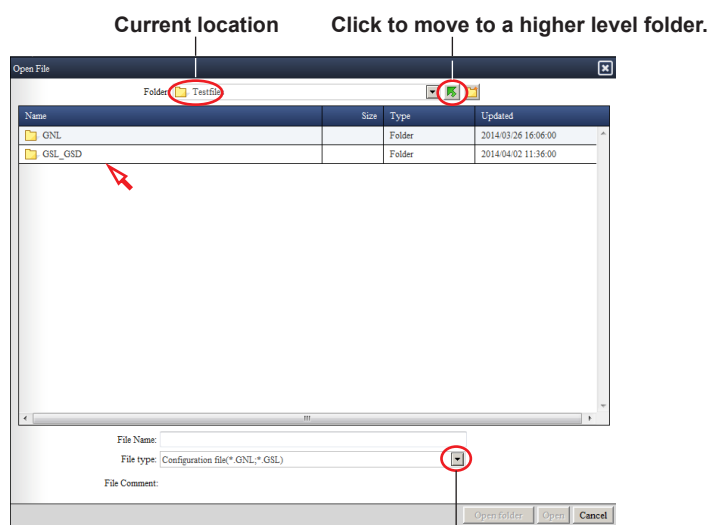


- 2 Click **Setting** tab and then **Open**.

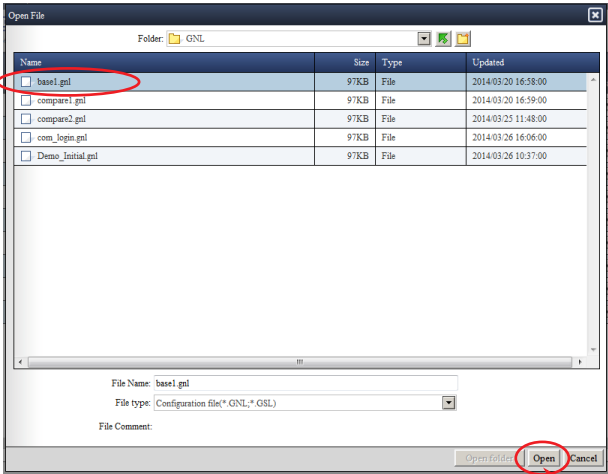


The Open dialog box* appears.

* To display the setup data of a measurement data file (*.GSE or *.GSD), change the file type.



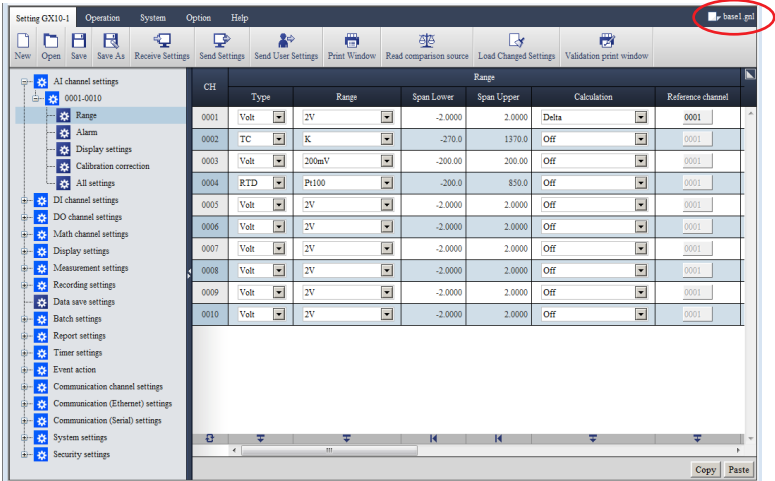
3 Select the setup data file that you want to open, and click **Open**.



Click Open.

The data is loaded.

The name of the loaded file appears.



Note

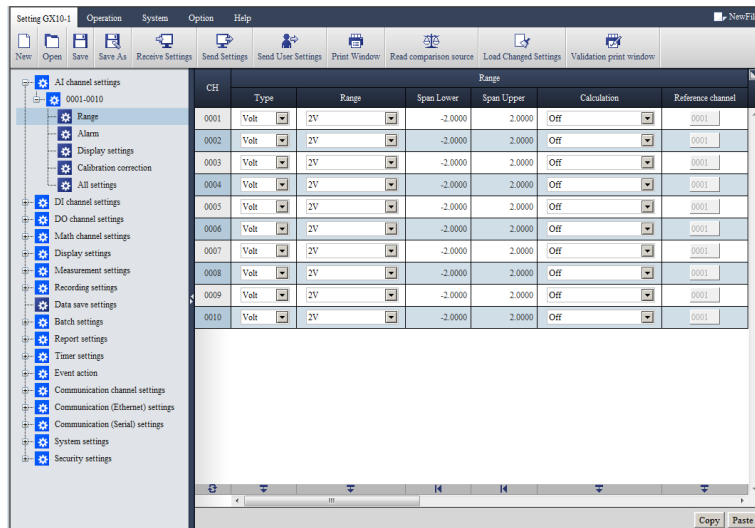
- In the case of a setup data file of a GX/GP/GM with the advanced security function (/AS), authentication is necessary to display the Security settings. For details, see section **"4.2 User Authentication"**
- A setup data file (.GSL extension) of a GX/GP/GM with the advanced security function (/AS) cannot be overwritten after it is displayed and edited.
- If you specify a measurement data file, the setup and data in the file will be loaded.
- The maximum file path length (including the file name) is 256 characters. If this limit is exceeded, an error will occur. Pay attention to the hierarchical depth and file name length.

2.2.2 Opening the Comparison Source File

This software has a validation print function, which can be used to compare and print settings, for verifying setup data. You can use the **Read comparison source** to load a reference comparison source file. The difference between the files can be verified on the **Validation print window**.

Procedure

- 1 Start Hardware Configurator.
The setup window appears.



- 2 Before loading the comparison source setup file, open the target setup file that you want to compare.

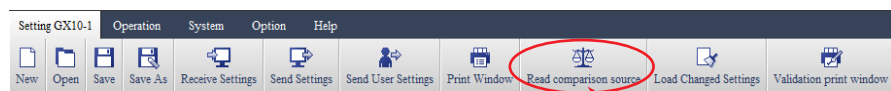
How to open a file: ► [2.2.1 Opening a File](#)

Note

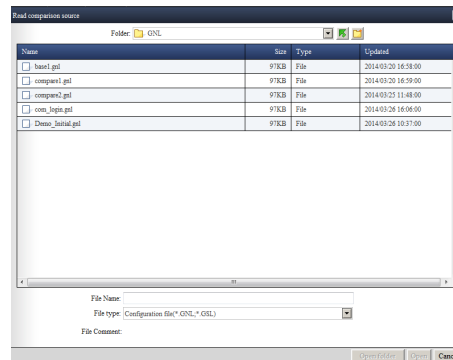
Make sure that the system configuration in the setup file that is currently displayed is the same as that in the comparison source file. If they are not the same, you will not be able to load the comparison source file.

Setting the system configuration: ► [“Step 4” on page 2-2](#)

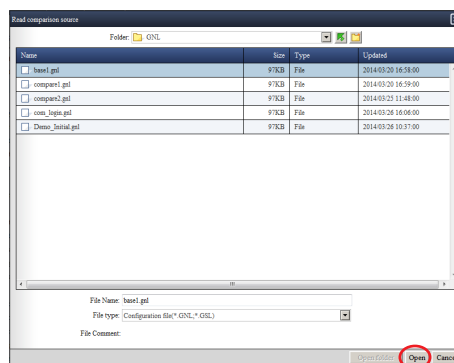
- 3 Click **Setting** tab and then **Read comparison source**.



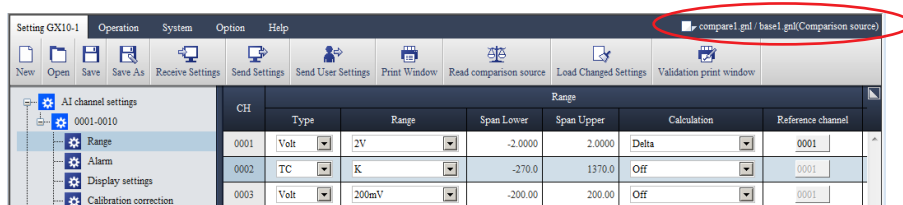
The Read comparison source dialog box appears.



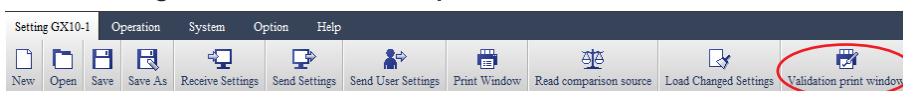
4 Select the comparison source file, and click **Open**.



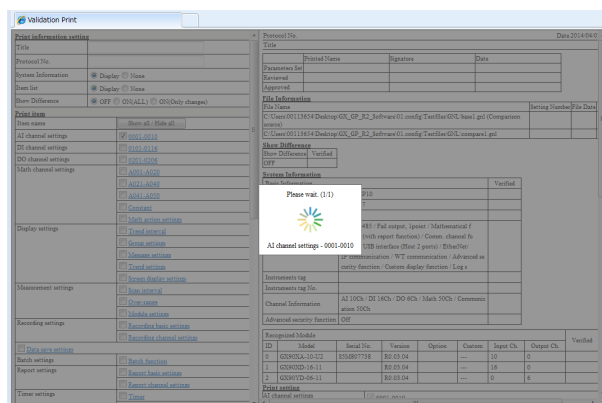
When the comparison source file is loaded, two file names will appear in the upper right of the window. The left is the name of the setup file that is currently displayed, and the right is the name of the comparison source file.



5 Click **Setting** tab and then **Validation print window**.

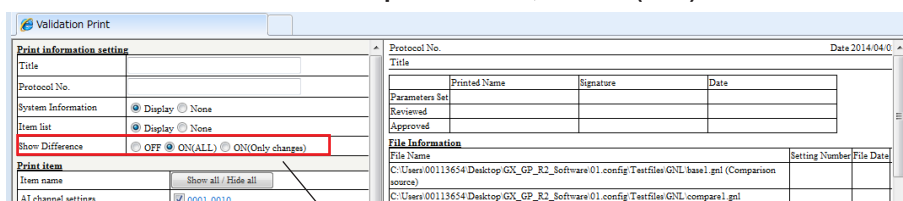


A separate window opens, and the window for printing is loaded.



The Validation print window appears.

6 On the left side of the **Validation print window**, click **ON(ALL)** of **Show Difference**.



"Show Difference"
Whether to include the difference

You can view the differences in the setup data in the print content on the right.

Validation Print

Print information settings

Protocol No.

Title

System Information

Item list

Show Difference

Print item

Item name

AI channel settings

DI channel settings

DO channel settings

Math channel settings

Display settings

Measurement settings

Recording settings

Batch settings

Report settings

Tuner settings

Communication channel settings

System Information

Product Name

Firmware Version

Model

Option

Instruments tag

Instruments tag No.

Channel Information

Advanced security function

Recognized Module

Print settings

AI channel settings

DI channel settings

DO channel settings

Math channel settings

Math action settings

Printed Name

Signature

Date

Comparison source

Show Differences

System Information

Product Name

Firmware Version

Model

Option

Instruments tag

Instruments tag No.

Channel Information

Advanced security function

Recognized Module

Print settings

AI channel settings

DI channel settings

DO channel settings

Math channel settings

Math action settings

For detailed information about “Validation print window”: ▶ 2.6.2 Validation Print

Note ////////////////////////////////////

The comparison source data is cleared when you perform any of the following operations.

- A new file with different system information is opened.
- Settings with different system information are received from the GX/GP.
- The system configuration is changed.
- A new file is created.

////////////////////////////////////

2-12

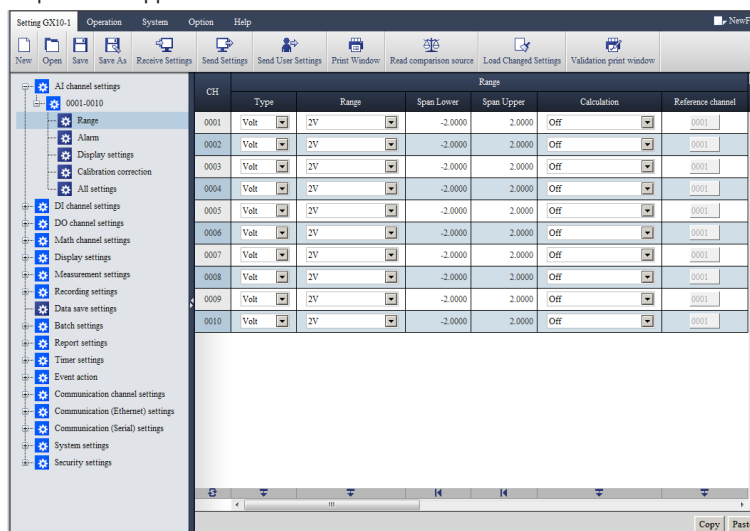
IM 04L61B01-02EN

2.2.3 Opening an Update Source File

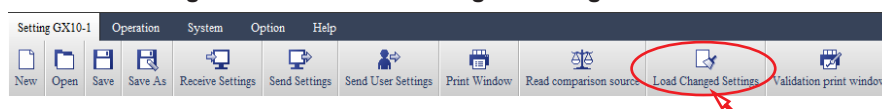
You can use the **Load Changed Settings** to load the setup data from a separate file and apply them to the current setup data. (The system configuration is not updated.)

Procedure

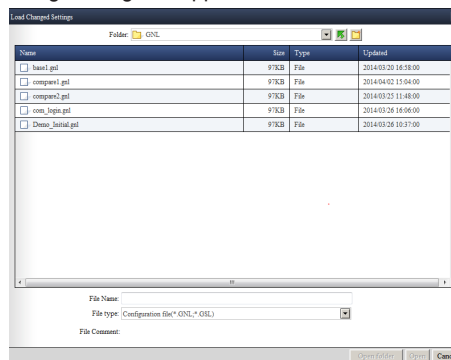
- 1 Start Hardware Configurator.
The setup window appears.



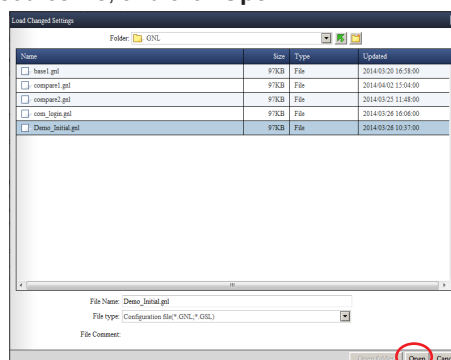
- 2 Open the target setup file that you want to change.
How to open a file: ► [2.2.1 Opening a File](#)
- 3 Click the **Setting** tab and then **Load Changed Settings**.



The Load Changed Settings dialog box appears.

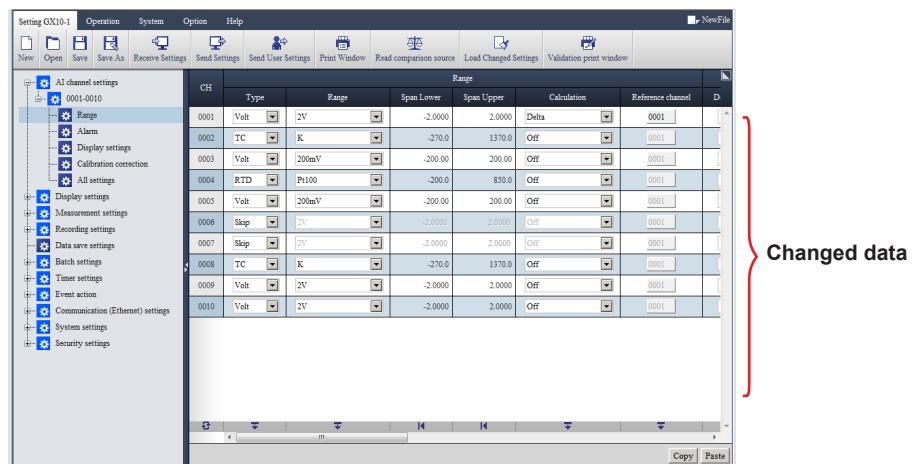


- 4 Select the update source file, and click **Open**.



2.2 Displaying Setup Data

The update source data is loaded, and the current setup data is changed.



5 If necessary, edit and save the changed data.
How to save a setup data file: ► [2.4 Saving Setup Data](#)

Note

Using the **Load Changed Settings** menu changes only the settings. It does not change the system configuration or the file name.

2.3 Editing Setup Data

2.3.1 Basic Operation

This section explains how to use Hardware Configurator to edit GX/GP's or GM's setup data. The setup data editing and display features are the same as those of the Web application on the main unit itself.

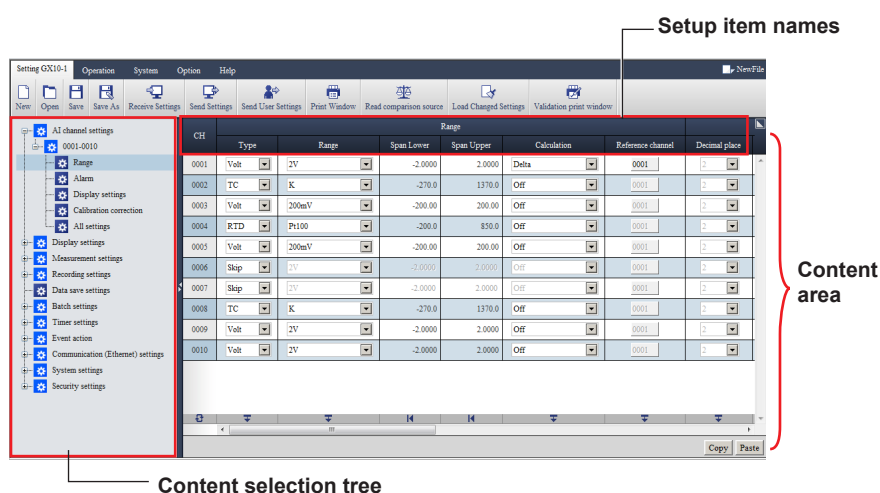
In addition, the setup items of this software are the same as those on the main unit. Therefore, this section will only cover typical operations and the unique features of this software.

- Setup item details: ▶ Chapter 1 "Configuring the GX/GP" in the *GX10/GX20/GP10/GP20 Paperless Recorder User's Manual* (IM 04L51B01-01EN).
▶ Chapter 2 "Configuring the GM" in the *Data Acquisition System GM User's Manual* (IM 04L55B01-01EN).

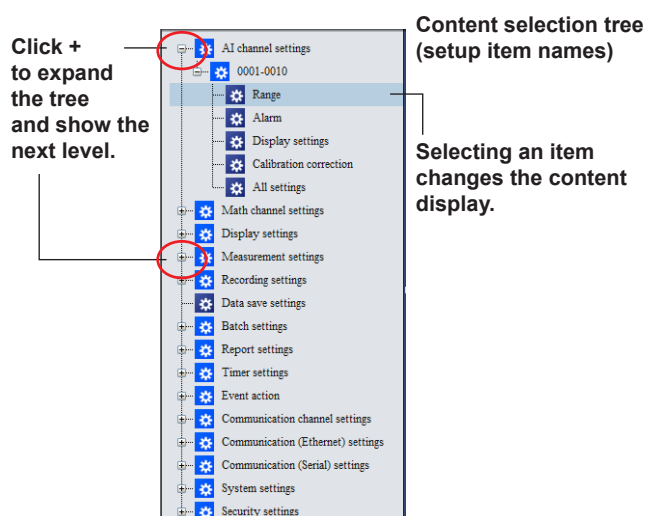
Editing the Setup Data (*.GSL) of a GX/GP/GM with the Advanced Security Function (/AS)
Be sure to also read the precautions provided in "[Chapter 4 Setup Data for GX/GP/GM with Advanced Security Function \(/AS\)](#)"

Procedure

- 1 Display the file that you want to edit on the **Setting** tab.



- 2 From the content selection tree, which is on the left side of the window, select the name of the setup item you want to edit. (This example will show how to set DI channels.)



When you select a title, the setup items appear in the content area, which is on the right.

2.3 Editing Setup Data

The channel settings content can be shown in Range, Alarm, Display settings, and Calibration correction groups. If you select All settings, all the setup items are displayed in the content area.

CH	On/Off	Type	Value	Hysteresis	Logging	Output type	Output No.
0001		H: High limit	0.0000	0.0001		On	1
0002		H: High limit	0.0000	0.0001		On	1
0003		H: High limit	0.0000	0.0001		On	1
0004		H: High limit	0.0000	0.0001		On	1

Items are displayed by each selected group.

- 3 Edit the channel settings.
Edit the setup items in the content area.

Channel number
1 line = 1 channel

**Scroll right to view
more setup items.**

CH	Range					Decimal place
	Type	Span Lower	Span Upper	Calculation	Reference channel	
0101	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0102	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0103	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0104	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0105	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0106	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0107	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0108	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0109	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>
0110	DI <input type="button" value="v"/>	0	1	Off <input type="button" value="v"/>	0001	2 <input type="button" value="v"/>

Note

The items and available settings that appear in the configuration window vary depending on the hardware system configuration. If an item that you want to edit does not appear, check the option and module configuration.

How to set the system configuration: ► **2.1 Creating New Setup Data**

Using the Jump Function

On setting edit windows in table format (e.g., channel setting window), you can jump to a specific position in the window.

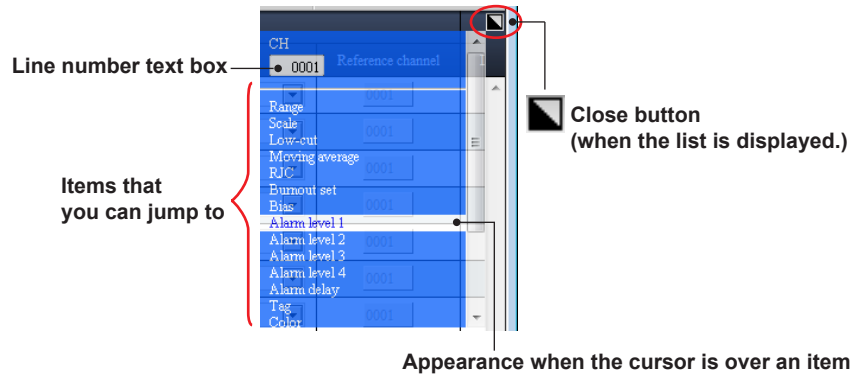
- 1 Click button in the upper right corner of the window.

AI channel settings		Alarm level 1						
0001-0010	On/Off	Type	Value	Hysteresis	Logging	Output type	Output No.	
Range								
Alarm	<input checked="" type="checkbox"/>	H: High limit	0.0000	0.0005	<input checked="" type="checkbox"/>	Off	1	
Display settings	<input type="checkbox"/>	H: High limit	0.0000	0.0005	<input checked="" type="checkbox"/>	Off	1	
Calibration correction	<input type="checkbox"/>	H: High limit	0.0000	0.0005	<input checked="" type="checkbox"/>	Off	1	
All settings	<input type="checkbox"/>	H: High limit	0.0000	0.0005	<input checked="" type="checkbox"/>	Off	1	

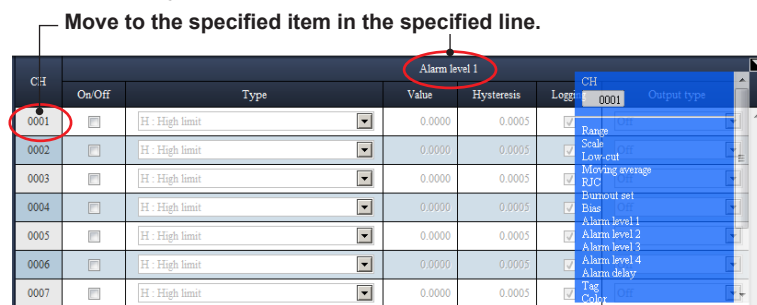
A list of items that you can jump to appears. If the list is long, a scroll bar appears.

CH	Type	Range		Calculation	Ref	Item list	
		Span Lower	Span Upper			CH	Decimal place
0001	Volt	2V	-2.0000 2.0000	Off		0001	Decimal place
0002	Volt	2V	-2.0000 2.0000	Off		Range	
0003	Volt	2V	-2.0000 2.0000	Off		Scale	
0004	Volt	2V	-2.0000 2.0000	Off		Low-cut	
0005	Volt	2V	-2.0000 2.0000	Off		Moving average	
0006	Volt	2V	-2.0000 2.0000	Off		2/3C	
0007	Volt	2V	-2.0000 2.0000	Off		Supernot set	
0008	Volt	2V	-2.0000 2.0000	Off		Bias	
0009	Volt	2V	-2.0000 2.0000	Off		Alarm level 1	
0010	Volt	2V	-2.0000 2.0000	Off		Alarm level 2	
						Alarm level 3	
						Alarm level 4	
						Alarm delay	
						Tsg	
						Colse	
0001	Volt	2V	-2.0000 2.0000	Off		0001	2
0002	Volt	2V	-2.0000 2.0000	Off		0002	2
0001	Volt	2V	-2.0000 2.0000	Off		0001	2

- 2** In the line number text box, enter the channel line number that you want to move to. The default value is the line number of the first line.



- 3** Select and click the jump destination item name on the list.



You can move to the specified setup item in the specified line.

- 4** To close the list, click the Close button in the upper right of the window.

Note

- If the line number text box is empty or the specified line number does not exist, the line will remain the same and only a horizontal movement will be made.
- The setup items that appear in the list are the parent title of each setup item. For example, Alarm level 1 will be displayed but not Value or Hysteresis.

2.3.2 Editing and Manipulating Values

From the content selection tree, select the title of the setup item that you want to edit, and edit the setup items that appear. Values are entered using the input controls and dialog boxes described below.

Input Controls

The following input controls are available.

Control Type	Display Example	Setup Procedure
Text box		Enter text or numbers.
Check box		When the check box is selected, the setting is "On" or enabled.
List box		Click the arrow, and select from the list that appears.
Option buttons		Click to select.

Dialog Boxes

The following dialog boxes are available. For details on how to use each dialog box, see the Operation Example in the table.

Dialog Box Type	Display Example	Setup Procedure
Channel selection button	Operation 1 Step 1, 2	Configure a specific channel such as an I/O channel.
Color selection	Operation 1 Step 3, 4	Select the display color of alarm marks and the like.
Channel selection string	Operation 2	Specify multiple channels such as when editing a display group.
Data selection	Operation 3	Specify internal switches and the like.
Special dialog box (calibration correction)	Operation 4	Use calibration correction.
Calculation expression input	Operation 5	Enter calculation expressions.

How to Use the Different Dialog Boxes

Operation 1

Channel selection button, Color selection

- 1 Set the channel range.
This example shows how to set the reference channel for difference computation. Click the channel number under Reference channel.

Click here (▼) to show the available values.

CH	Range					
	Type	Span Lower	Span Upper	Calculation	Reference channel	Decimal
0101	DI	0	1	Linear scaling	0001	2
0102	DI	0	1	Delta	0001	2
0103	Skip DI	0	1	Delta	0001	2
0104	DI	0	1	Off	0001	2

Enter values within the selectable range.

Click to display the Channel selection dialog box.

The Channel selection dialog box appears.

- 2 Click the channel number under Reference channel.

DI channel [0102] Reference channel

Click the number to select the channel

Show or hide by channel type (when multiple channel types are available).

Clicking a number applies the output destination and closes the dialog box.

- 3 Scroll to the right, and set all necessary items.
- 4 If you want to change the alarm mark color, click a color.

CH	Alarm point mark					
	Indicate on Scale	Mark type	Alarm 1 color	Alarm 2 color	Alarm 3 color	Alarm 4 color
0001	<input checked="" type="checkbox"/>	Fixed				
0002	<input type="checkbox"/>	Alarm				

The color selection dialog box appears.

AI channel [0001] Alarm point mark Alarm 2 color

Current color Red

Key color

Recently used color

OK

Cancel

- 5** To create a color, enter values in the Current color boxes. To use a key color, select the color, and click **OK**.

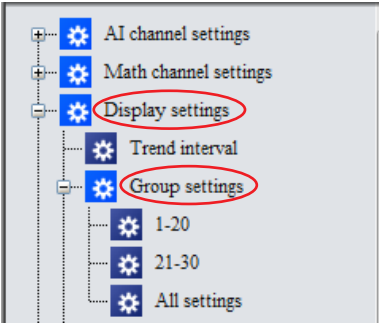
The selected color is applied.

Operation 2

Channel selection string

This example shows how to assign channels to group 1.

- 1** On the content selection tree, click **Display settings** and then **Group settings**.
- 2** From the list of group numbers under **Group settings**, select the group numbers that you want to display. Here, select **1-20** (groups 1 to 20).



The Group settings dialog box appears.

- 3** Click **Channel set** of **Group number 1**.

Group number	Group settings			Scale mm
	On/Off	Group name	Channel set	
1	<input checked="" type="checkbox"/>	GROUP 1	0001.0002.0003.0004.0005.0006.0007.0008.0009.0010	
2	<input checked="" type="checkbox"/>	GROUP 2	A001.C001	

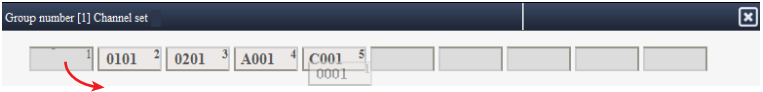
The **Group number [1] Channel set** dialog box appears.

- 4** Select the check boxes of the channels that you want to include in group 1. To exclude a channel from group 1, clear the check box.

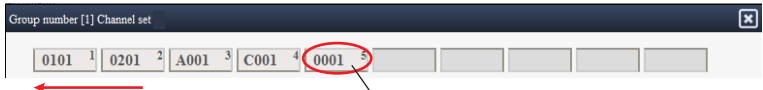
A screenshot of the 'Group number [1] Channel set' dialog box. At the top, there is a 'Channel order' section with a list of channels: 0001, 0002, 0003, A001, C001, and several empty slots. Below this are three sections: 'AI channel', 'Math channel', and 'Communication channel'. Each section contains a grid of checkboxes for individual channels. In the 'AI channel' section, the checkbox for 0010 is circled in red. At the bottom, there are three checkboxes: 'AI channel', 'Math channel', and 'Communication channel', all of which are checked. Below these are two buttons: 'On/Off' and 'On/Off for selected channels'. Annotations with arrows point to the 'Channel order' list, the '0010' checkbox, the 'On/Off' button, and the 'On/Off for selected channels' button.

The selected channels are listed at the top area of the window.

- 5 The channel numbers at the top area of the window can be dragged to change their order.



If you drop the first number “0001” on the fifth number “C001,”



“0001” is moved there, and other channels are shifted to the left.

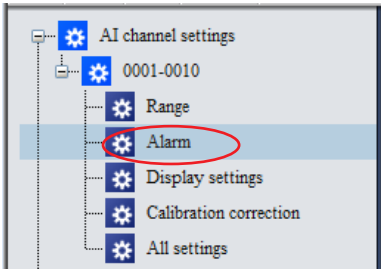
- 6 Click **OK**.
The channel numbers selected under Channel set are applied.

Operation 3

Data selection

This example shows how to set the alarm output destination.

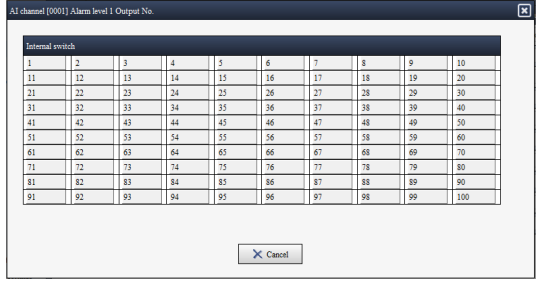
- 1 On the content selection tree, click **Alarm**.



- 2 Under **Alarm Level 1**, select the **On/Off** check box of channel 1. Here, set **Output type** to **Internal switch**.

Alarm level 1							
CH	On/Off	Type	Value	Hysteresis	Logging	Output type	Output No.
0001	<input checked="" type="checkbox"/>	H : High limit	0.0000	0.0005	<input checked="" type="checkbox"/>	Off	1
0002	<input type="checkbox"/>	H : High limit	0.0000	0.0005	<input checked="" type="checkbox"/>	Internal switch	1
0003	<input type="checkbox"/>	H : High limit	0.0000	0.0005	<input checked="" type="checkbox"/>	Off	1

- 3 Click **Output No.**.
The Output No. dialog box appears.



- 4 Select the output Internal switch number.
The selected switch number is applied, and the setup window returns.

Note

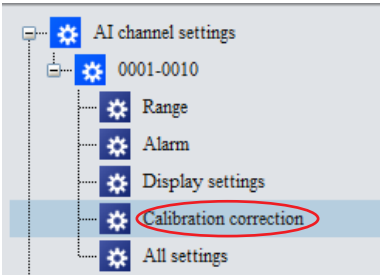
- When the maximum number of selectable channels is reached, you will no longer be able to select additional channels.
- On dialog boxes that show check boxes and option buttons, you can select a range.
How to select a range: ► 2.3.4 Selecting a Range and Copying and Pasting

Operation 4

Calibration Correction

This example shows how to edit Calibration correction under AI channel settings.

1 On the content selection tree, click **Calibration correction**.



2 Set the **Mode** and **Number of set points**.

CH	Calibration correction		
	Mode	Number of set points	Linearizer input/output
0001	Off	2	Linearizer input/output
0002	Off	2	Linearizer input/output

3 Under Calibration correction, click **Linearizer input/output**.

CH	Calibration correction		
	Mode	Number of set points	Linearizer input/output
0001	Linearizer Approximation	12	Linearizer input/output
0002	Off	2	Linearizer input/output

The Calibration correction dialog box appears.

Calibration correction set points

AI channel[0001] Calibration correction

Linearizer input/output number	Linearizer input	Linearizer output
1	-2.0000	-2.0000
2	-1.6364	-1.6364
3	-1.2727	-1.2727
4	-0.9091	-0.9091
5	-0.5455	-0.5455
6	-0.1818	-0.1818
7	0.1818	0.1818
8	0.5455	0.5455
9	0.9091	0.9091
10	1.2727	1.2727
11	1.6364	1.6364
12	2.0000	2.0000

OK Cancel

Editing an input position causes the value to be checked against the upper and lower limits and the value to be corrected.

Editing an output position causes the value to be checked against the upper and lower limits.

Note

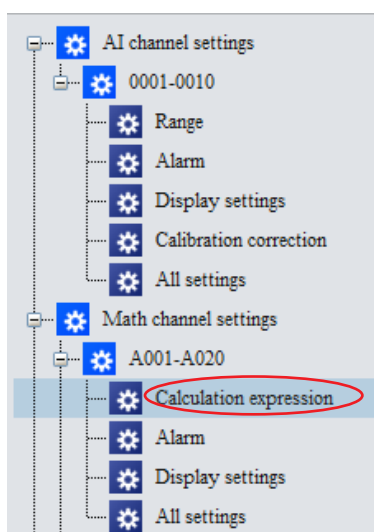
If you enter a value in any input position in the Calibration correction dialog box, the value is checked against the upper and lower limits and against the values of other positions and corrected. If you enter a value in any output position, the value is only checked against the upper and lower limits. For details on calibration correction, see the *Models GX10/GX20/GP10/GP20 Paperless Recorder User's Manual* (IM 04L51B01-01EN).

Operation 5

Calculation expression input

This example shows how to set a calculation expression in a math channel using the appropriate dialog boxes.

- 1** On the content selection tree, click **Math channel settings** and then **Calculation expression**.



- 2** Select the **On/Off** check box of the channel that you want to set a calculation expression in.

CH	On/Off	Calculation expression	Decimal place
A001	<input checked="" type="checkbox"/>	0001 Calculation expression	2 ▼
A002	<input type="checkbox"/>	0001 Calculation expression	2 ▼
A003	<input type="checkbox"/>	0001 Calculation expression	2 ▼
A004	<input type="checkbox"/>	0001 Calculation expression	2 ▼

The Calculation expression button becomes available.

- 3** Click **Calculation expression**.

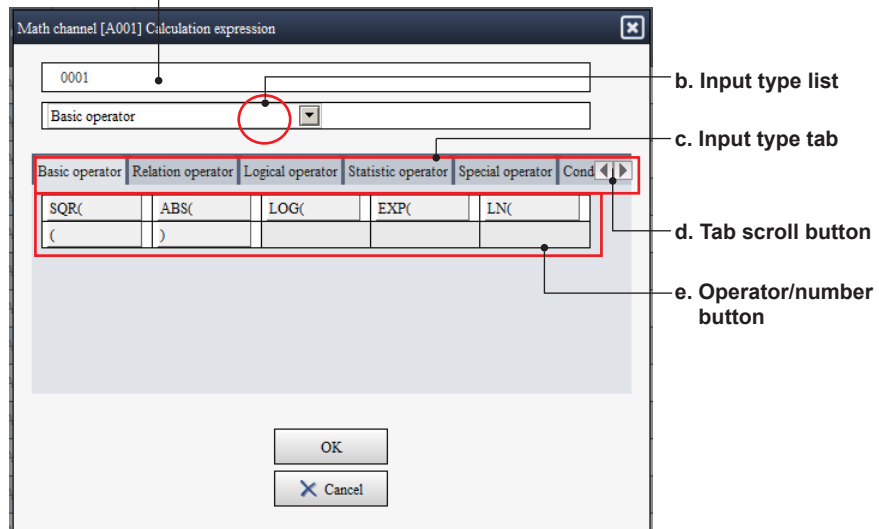
CH	On/Off	Calculation expression
A001	<input checked="" type="checkbox"/>	0001
A002	<input checked="" type="checkbox"/>	0001
A003	<input checked="" type="checkbox"/>	0001
A004	<input type="checkbox"/>	0001

A Calculation expression dialog box appears. (Continued on the next page)

Note

You can also directly enter the expression (text) in Calculation expression of the setup window without using the dialog box.

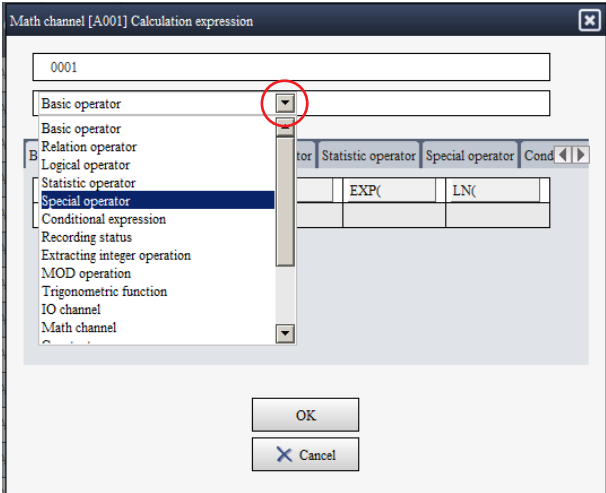
a. Calculation expression edit box



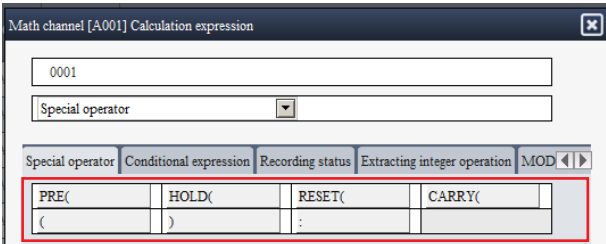
The table below shows the details for the items.

Item	Description
a. Calculation expression edit box	The box for entering the calculation expression. You can directly enter text.
b. Input type list	The items in the list are the same as those of “c”, Input type tab. The list name that you select here becomes the tab name.
c. Input type tab	Tab pages containing operators, numbers, and the like used in calculation expressions. They are grouped by input type. Clicking a tab displays the operators and numbers for the input type in area “e.”
d. Tab scroll button	Click to scroll the tab position horizontally.
e. Operator/number button	Click to add the text shown on the button to the end of the “a” text string.

- 4 Enter the calculation expression in the calculation expression edit box. Click the Input type list arrow, and select the operator or channel that you want to display.



The selected operator is displayed.



You can also select the Input type tab to display in a similar manner.
In addition, clicking the channel list or tab displays channels.

Math channel [A001] Calculation expression

0001

IO channel

MOD operation Trigonometric function IO channel Math channel Constant Communication

AI channel

0001	0002	0003	0004	0005	0006	0007	0008	0009	0010
------	------	------	------	------	------	------	------	------	------

- 5 Click the operator or channel that you want to enter in the calculation expression.

Math channel [A001] Calculation expression

0001+C001

Communication channel

MOD operation Trigonometric function IO channel Math channel Constant Communication

C001	C002	C003	C004	C005	C006	C007	C008	C009	C010
C011	C012	C013	C014	C015	C016	C017	C018	C019	C020
C021	C022	C023	C024	C025	C026	C027	C028	C029	C030
C031	C032	C033	C034	C035	C036	C037	C038	C039	C040
C041	C042	C043	C044	C045	C046	C047	C048	C049	C050

OK

Cancel

The appropriate characters are added at the cursor position.

- 6 When you are finished entering the calculation expression, click **OK**.

Math channel [A001] Calculation expression

0001+C001-K001

Constant

MOD operation Trigonometric function IO channel Math channel Constant Communication

K001	K002	K003	K004	K005	K006	K007	K008	K009	K010
K011	K012	K013	K014	K015	K016	K017	K018	K019	K020
K021	K022	K023	K024	K025	K026	K027	K028	K029	K030
K031	K032	K033	K034	K035	K036	K037	K038	K039	K040
K041	K042	K043	K044	K045	K046	K047	K048	K049	K050
K051	K052	K053	K054	K055	K056	K057	K058	K059	K060
K061	K062	K063	K064	K065	K066	K067	K068	K069	K070

OK

Cancel

The dialog box closes, and the entered expression appears in Calculation expression in the setup window.

If the Calculation Expression Overflows

If the calculation expression is too long, it will not fit in the edit box.

In such a case, moving the cursor over the calculation expression in the setup window will show the entire expression in a pop-up.

- Pop-up display when the entered calculation expression fits in the edit box

CH	On/Off	Calculation expression	Decimal place
A001	<input checked="" type="checkbox"/>	0001+C001-K001	2
A002	<input type="checkbox"/>	0001	2

- Pop-up display when the entered calculation expression does not fit in the edit box

CH	On/Off	Calculation expression	Decimal place
A001	<input checked="" type="checkbox"/>	0001+0002+0003+0004+0005+0006+0007+0008+0009+0010+A001+A002+A003	2
A002	<input type="checkbox"/>	0001	2
A003	<input type="checkbox"/>	0001	2
A004	<input type="checkbox"/>	0001	2

If an Invalid Calculation Expression Is Entered

If an invalid calculation expression is entered, the expression is displayed in red. The pop-up will display an error message and the entire calculation expression.

- Error message in the first line and the entire expression in the subsequent lines

CH	On/Off	Calculation expression	Decimal place
A001	<input checked="" type="checkbox"/>	0000+0002+0003+0004+0005+0006+0007+0008+0009+0010	2
A002	<input type="checkbox"/>	0001	2
A003	<input type="checkbox"/>	0001	2

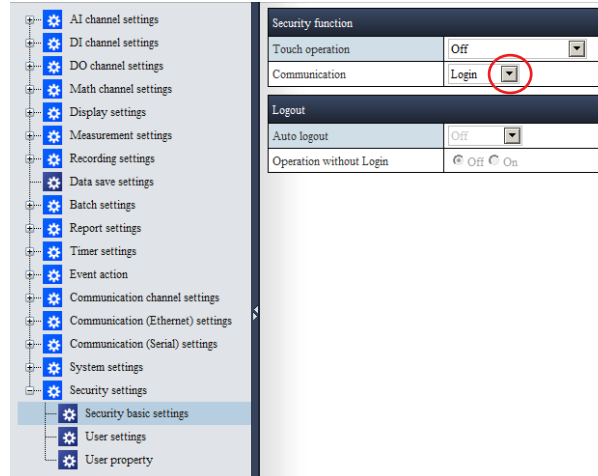
Note

- The calculation expression that appears in the pop-up are updated when you finish entering the calculation expression. It is not updated while you are entering the calculation expression (while the cursor is in the text box).
- The pop-up does not appear in the calculation expression text box of the dialog box.

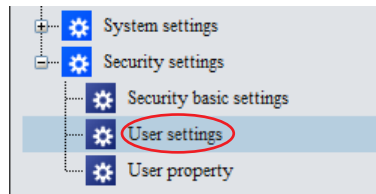
2.3.3 How to Register Users

This example shows how to register users when Advanced security function (/AS) is set to Off.

- 1 From the content selection tree, select **Security settings - Security basic settings**, and set **Security settings**.
Set **Login** to **Communication**.
User settings and User property are added to the tree content.



- 2 From the contents selection tree, select Security settings - User settings.



- 3 Register the user information for each user number.
User level of **User number** 1 is fixed to **Admin**. Register new users from the second user.

The first user is fixed to Admin.

Select the mode.

Click to register a password.

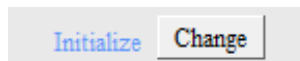
User number	User level	Mode	User name	Password
1	Admin	Touch operation + Communication	User01	**** Change
2	User	Touch operation + Communication	User02	**** Change
3	Off	Touch operation + Communication	User03	**** Change
4	Off	Touch operation + Communication	User04	**** Change
5	Off	Touch operation + Communication	User05	**** Change

To register a password, click **Change**.

If you change a password, the concealed characters (asterisks) will turn blue.



If you change the user name, the corresponding password will be initialized. In this case, "Initialize" will appear in blue.



4 To set **User property** *, select **On** and assign an **Authority number**.

User number	User level	Mode	User name	Password	User property	Authority number
1	Admin	Touch operation + Communication	User01	***** Change	Off	1
2	User	Communication	User02	***** Change	On	1
3	User	Touch operation	User03	***** Change	Off	1
4	Off	Touch operation + Communication	User04	***** Change	Off	1

* Limits are set using **Security settings > User property**. To restrict an operation, change **Free** to **Lock**.

Authority number	Record	Data save	Message	Batch
1	Free	Free	Free	Free
2	Free	Free	Free	Free
3	Free	Free	Free	Free
4	Free	Free	Free	Free
5	Free	Free	Free	Free
6	Free	Free	Free	Free
7	Free	Free	Free	Free
8	Free	Free	Free	Free
9	Free	Free	Free	Free
10	Free	Free	Free	Free

Note

- Only Admin can be registered in user number 1.
- Make a note of the administrator password, and do not lose it.
- Enter the password using up to 20 characters. Single quotations, semicolons, and spaces are not allowed.
- You can set User property only when the User level is User.

2.3.4 Selecting a Range and Copying and Pasting

This software enables you to select a range of setup items to edit them, copy them, and paste them.

This section explains how to select a range of items and how to use the Copy, Paste, and Tool buttons.

Selecting a Range

Procedure

- 1 To select a line, click an item name.
The example below is for **Display settings - Trend settings - List type**.

Trend settings	
Direction	<input checked="" type="radio"/> Vertical <input type="radio"/> Horizontal
Trend clear	<input checked="" type="radio"/> Off <input checked="" type="radio"/> On
Trend line	<input type="radio"/> Thick <input checked="" type="radio"/> Normal <input type="radio"/> Thin
Grid	Auto <input type="button" value="v"/>
Scale	
Digit	<input checked="" type="radio"/> Normal <input type="radio"/> Fine
Value indicator	<input checked="" type="radio"/> Mark <input type="radio"/> Bar graph
Digit of mark	3 digits <input type="button" value="v"/>
Partial	
On/Off	<input checked="" type="radio"/> Off <input type="radio"/> On
Message	
Write group	<input checked="" type="radio"/> Common <input type="radio"/> Separate
Power-fail message	<input checked="" type="radio"/> Off <input type="radio"/> On
Change message	<input checked="" type="radio"/> Off <input type="radio"/> On

Click the line name.

The line is selected.

- 2 To select multiple lines, drag the cursor and release the mouse at the last line you want to select.

Trend settings	
Direction	<input checked="" type="radio"/> Vertical <input type="radio"/> Horizontal
Trend clear	<input checked="" type="radio"/> Off <input checked="" type="radio"/> On
Trend line	<input type="radio"/> Thick <input checked="" type="radio"/> Normal <input type="radio"/> Thin
Grid	Auto <input type="button" value="v"/>
Scale	
Digit	<input type="radio"/> Normal <input checked="" type="radio"/> Fine
Value indicator	<input checked="" type="radio"/> Mark <input type="radio"/> Bar graph
Digit of mark	3 digits <input type="button" value="v"/>
Partial	
On/Off	<input checked="" type="radio"/> Off <input type="radio"/> On
Message	
Write group	<input checked="" type="radio"/> Common <input type="radio"/> Separate
Power-fail message	<input checked="" type="radio"/> Off <input type="radio"/> On
Change message	<input checked="" type="radio"/> Off <input type="radio"/> On

Drag across the line names to select multiple lines.

Multiple lines are selected.

Note

When selecting a range, you cannot select multiple lines one by one. You cannot select columns individually.

Copying the Selected Range and Pasting

Procedure

- 1 To copy the selected range, click the **Copy** button, which is located in the lower right of the window. You can also press Ctrl+C on the keyboard.
When the range is copied to the Clipboard, the color of the range changes as shown below.

Trend settings	
Direction	<input checked="" type="radio"/> Vertical <input type="radio"/> Horizontal
Trend clear	<input checked="" type="radio"/> Off <input type="radio"/> On
Trend line	<input type="radio"/> Thick <input checked="" type="radio"/> Normal <input type="radio"/> Thin
Grid	Auto

- 2 You can paste the contents of the Clipboard to an Excel spreadsheet or a text file. The figure below shows an example in which the contents are copied to cell A1 of an Excel spreadsheet.

When pasting to an Excel spreadsheet, check the format of the cell that you are pasting to.

	A	B	C
1	Trend clear	Off	
2	Trend line	Normal	
3	Grid	Auto	
4	Digit	Normal	
5	Value indicator	Mark	
6	Digit of mark	3 digits	
7	On/Off	Off	
8			

- 3 The pasted contents can be edit on Excel or a text editor.

	A	B
1	Direction	Horizontal
2	Trend clear	Off
3	Trend line	Normal
4	Grid	Auto

➔

	A	B
1	Direction	Vertical
2	Trend clear	On
3	Trend line	Thin
4	Grid	5

Edit the values in the B column in Excel.

- 4 The edit contents can be pasted back to the setup items. Copy the edit results from the Excel spreadsheet. Copy not just the values but also the item names in row A.

	A	B
1	Direction	Vertical
2	Trend clear	On
3	Trend line	Thin
4	Grid	5
5		

- 5 Select the paste range in the configuration window. Make the paste range the same as the range of the copied data (the number of lines).

Trend settings	
Direction	<input checked="" type="radio"/> Vertical <input type="radio"/> Horizontal
Trend clear	<input checked="" type="radio"/> Off <input type="radio"/> On
Trend line	<input type="radio"/> Thick <input checked="" type="radio"/> Normal <input type="radio"/> Thin
Grid	Auto

- 6 Paste the data. Click the **Paste** button, which is located in the lower right of the window. You can also press Ctrl+V on the keyboard.

Trend settings	
Direction	<input checked="" type="radio"/> Vertical <input type="radio"/> Horizontal
Trend clear	<input type="radio"/> Off <input checked="" type="radio"/> On
Trend line	<input type="radio"/> Thick <input checked="" type="radio"/> Normal <input type="radio"/> Thin
Grid	5

The edit results from the Excel spreadsheet is pasted to the configuration window.

Note

- Depending on the format of the Excel cells that you are pasting to, the values may change when you paste the contents from the Clipboard. For example, if the format is set to **Number**, "0001" will change to "1". You can prevent pasted values from being automatically corrected by setting **Number** to **Text** in the Format Cells dialog box of the Excel sheet that you want to paste to.
- If the values cannot be pasted as they are to the Excel sheet even with the settings above, we recommend that you use a text editor for copying and pasting.
- If the values that you edit with Excel or a text editor are outside the setting range, when you paste the data back to the configuration window of the software, the values will be corrected in the same way as when you enter values directly.

Selecting a Range of Channels Whose Types Are Different and Copying and Pasting Them

The example below is an AI channel configuration window.

Procedure

- 1 Select a range of channels as shown below.

CH	Range					
	Type	Range	Span Lower	Span Upper	Calculation	Reference channel
0001	Skip	2V	-2.0000	2.0000	Off	0001
0002	Volt	2V	-2.0000	2.0000	Off	0001
0003	TC	K	-270.0	1370.0	Delta	0001
0004	RTD	Pt100	-200.0	850.0	Off	0001

Click the name of the line to select the entire line.
Drag down to select multiple lines.

- 2 Copy the channel information (lines).

CH	Range					
	Type	Range	Span Lower	Span Upper	Calculation	Reference channel
0001	Skip	2V	-2.0000	2.0000	Off	0001
0002	Volt	2V	-2.0000	2.0000	Off	0001
0003	TC	K	-270.0	1370.0	Delta	0001
0004	RTD	Pt100	-200.0	850.0	Off	0001

Press Ctrl+C, or click Copy to copy the cells.

3 Paste to different channels.

CH	Range				Calculation
	Type	Range	Span Lower	Span Upper	
0001	Skip	2V	-2.0000	2.0000	Off
0002	Volt	2V	-2.0000	2.0000	Off
0003	TC	K	-270.0	1370.0	Delta
0004	RTD	Pt100	-200.0	850.0	Off
0005	Skip	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off
0007	TC	K	-270.0	1370.0	Delta
0008	RTD	Pt100	-200.0	850.0	Off
0009	Volt	2V	-2.0000	2.0000	Off
0010	Volt	2V	-2.0000	2.0000	Off

Copy

Paste

Select the cells to paste to. Press Ctrl+V, or click Paste to paste to the cells.

The example below shows the configuration window that appears when you select **Display settings - Group settings - Channel set**.

Procedure

- 1 Select a range of channels as shown below.

AI channel									
<input checked="" type="checkbox"/> 0001	<input checked="" type="checkbox"/> 0002	<input checked="" type="checkbox"/> 0003	<input checked="" type="checkbox"/> 0004	<input checked="" type="checkbox"/> 0005	<input checked="" type="checkbox"/> 0006	<input checked="" type="checkbox"/> 0007	<input checked="" type="checkbox"/> 0008	<input checked="" type="checkbox"/> 0009	<input checked="" type="checkbox"/> 0010
DI channel									
<input type="checkbox"/> 0101	<input type="checkbox"/> 0102	<input type="checkbox"/> 0103	<input type="checkbox"/> 0104	<input type="checkbox"/> 0105	<input type="checkbox"/> 0106	<input type="checkbox"/> 0107	<input type="checkbox"/> 0108	<input type="checkbox"/> 0109	<input type="checkbox"/> 0110
<input type="checkbox"/> 0111	<input type="checkbox"/> 0112	<input type="checkbox"/> 0113	<input type="checkbox"/> 0114	<input type="checkbox"/> 0115	<input type="checkbox"/> 0116				

Click a label in a cell to select a single cell.

AI channel									
<input checked="" type="checkbox"/> 0001	<input checked="" type="checkbox"/> 0002	<input checked="" type="checkbox"/> 0003	<input checked="" type="checkbox"/> 0004	<input checked="" type="checkbox"/> 0005	<input checked="" type="checkbox"/> 0006	<input checked="" type="checkbox"/> 0007	<input checked="" type="checkbox"/> 0008	<input checked="" type="checkbox"/> 0009	<input checked="" type="checkbox"/> 0010
DI channel									
<input type="checkbox"/> 0101	<input checked="" type="checkbox"/> 0102	<input checked="" type="checkbox"/> 0103	<input checked="" type="checkbox"/> 0104	<input checked="" type="checkbox"/> 0105	<input type="checkbox"/> 0106	<input type="checkbox"/> 0107	<input type="checkbox"/> 0108	<input type="checkbox"/> 0109	<input type="checkbox"/> 0110
<input type="checkbox"/> 0111	<input checked="" type="checkbox"/> 0112	<input checked="" type="checkbox"/> 0113	<input checked="" type="checkbox"/> 0114	<input checked="" type="checkbox"/> 0115	<input type="checkbox"/> 0116				

Drag to select a rectangular area.

AI channel									
<input checked="" type="checkbox"/> 0001	<input checked="" type="checkbox"/> 0002	<input checked="" type="checkbox"/> 0003	<input checked="" type="checkbox"/> 0004	<input checked="" type="checkbox"/> 0005	<input checked="" type="checkbox"/> 0006	<input checked="" type="checkbox"/> 0007	<input checked="" type="checkbox"/> 0008	<input checked="" type="checkbox"/> 0009	<input checked="" type="checkbox"/> 0010
DI channel									
<input type="checkbox"/> 0101	<input checked="" type="checkbox"/> 0102	<input checked="" type="checkbox"/> 0103	<input checked="" type="checkbox"/> 0104	<input checked="" type="checkbox"/> 0105	<input type="checkbox"/> 0106	<input type="checkbox"/> 0107	<input type="checkbox"/> 0108	<input type="checkbox"/> 0109	<input type="checkbox"/> 0110
<input type="checkbox"/> 0111	<input checked="" type="checkbox"/> 0112	<input checked="" type="checkbox"/> 0113	<input checked="" type="checkbox"/> 0114	<input checked="" type="checkbox"/> 0115	<input type="checkbox"/> 0116				

Selection can be made across different setup item blocks.

- 2 While holding down Ctrl, click any of the check boxes in the selected range, or click the **On/Off** button to select or clear all the check boxes in the selected range.

Check boxes in the selected range will be On at once.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AI channel									
<input type="checkbox"/> 0001	<input checked="" type="checkbox"/> 0002	<input checked="" type="checkbox"/> 0003	<input type="checkbox"/> 0004	<input type="checkbox"/> 0005	<input type="checkbox"/> 0006	<input type="checkbox"/> 0007	<input type="checkbox"/> 0008	<input type="checkbox"/> 0009	<input type="checkbox"/> 0010
DI channel									
<input type="checkbox"/> 0101	<input checked="" type="checkbox"/> 0102	<input checked="" type="checkbox"/> 0103	<input type="checkbox"/> 0104	<input type="checkbox"/> 0105	<input type="checkbox"/> 0106	<input type="checkbox"/> 0107	<input type="checkbox"/> 0108	<input type="checkbox"/> 0109	<input type="checkbox"/> 0110
<input type="checkbox"/> 0111	<input checked="" type="checkbox"/> 0112	<input checked="" type="checkbox"/> 0113	<input type="checkbox"/> 0114	<input type="checkbox"/> 0115	<input type="checkbox"/> 0116				

Click while holding down Ctrl, or click On/Off.

Selected channels.

<input checked="" type="checkbox"/> 0002	<input checked="" type="checkbox"/> 0003	<input checked="" type="checkbox"/> 0102	<input checked="" type="checkbox"/> 0103	<input checked="" type="checkbox"/> 0112	<input checked="" type="checkbox"/> 0113	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AI channel									
<input type="checkbox"/> 0001	<input checked="" type="checkbox"/> 0002	<input checked="" type="checkbox"/> 0003	<input type="checkbox"/> 0004	<input type="checkbox"/> 0005	<input type="checkbox"/> 0006	<input type="checkbox"/> 0007	<input type="checkbox"/> 0008	<input type="checkbox"/> 0009	<input type="checkbox"/> 0010
DI channel									
<input type="checkbox"/> 0101	<input checked="" type="checkbox"/> 0102	<input checked="" type="checkbox"/> 0103	<input type="checkbox"/> 0104	<input type="checkbox"/> 0105	<input type="checkbox"/> 0106	<input type="checkbox"/> 0107	<input type="checkbox"/> 0108	<input type="checkbox"/> 0109	<input type="checkbox"/> 0110
<input type="checkbox"/> 0111	<input checked="" type="checkbox"/> 0112	<input checked="" type="checkbox"/> 0113	<input type="checkbox"/> 0114	<input type="checkbox"/> 0115	<input type="checkbox"/> 0116				

Click again to clear all the check boxes.

- 3 The contents in the selected range can be pasted to other cells.

Select the cells to copy from, and press Ctrl+C to copy.

0002	1	0003	2	0102	3	0103	4	0112	5	0113	6				
AI channel															
<input type="checkbox"/>	0001	<input checked="" type="checkbox"/>	0002	<input checked="" type="checkbox"/>	0003	<input type="checkbox"/>	0004	<input type="checkbox"/>	0005	<input type="checkbox"/>	0006	<input type="checkbox"/>	0007	<input type="checkbox"/>	0010
DI channel															
<input type="checkbox"/>	0101	<input checked="" type="checkbox"/>	0102	<input checked="" type="checkbox"/>	0103	<input type="checkbox"/>	0104	<input type="checkbox"/>	0105	<input type="checkbox"/>	0106	<input type="checkbox"/>	0107	<input type="checkbox"/>	0110
<input type="checkbox"/>	0111	<input checked="" type="checkbox"/>	0112	<input checked="" type="checkbox"/>	0113	<input type="checkbox"/>	0114	<input type="checkbox"/>	0115	<input type="checkbox"/>	0116				
DO channel															
<input type="checkbox"/>	0201	<input type="checkbox"/>	0202	<input type="checkbox"/>	0203	<input type="checkbox"/>	0204	<input type="checkbox"/>	0205	<input type="checkbox"/>	0206				



0002	1	0003	2	0102	3	0103	4	0112	5	0113	6				
AI channel															
<input type="checkbox"/>	0001	<input checked="" type="checkbox"/>	0002	<input checked="" type="checkbox"/>	0003	<input type="checkbox"/>	0004	<input type="checkbox"/>	0005	<input type="checkbox"/>	0006	<input type="checkbox"/>	0007	<input type="checkbox"/>	0010
DI channel															
<input type="checkbox"/>	0101	<input checked="" type="checkbox"/>	0102	<input checked="" type="checkbox"/>	0103	<input type="checkbox"/>	0104	<input type="checkbox"/>	0105	<input type="checkbox"/>	0106	<input type="checkbox"/>	0107	<input type="checkbox"/>	0110
<input type="checkbox"/>	0111	<input checked="" type="checkbox"/>	0112	<input checked="" type="checkbox"/>	0113	<input type="checkbox"/>	0114	<input type="checkbox"/>	0115	<input type="checkbox"/>	0116				
DO channel															
<input type="checkbox"/>	0201	<input type="checkbox"/>	0202	<input type="checkbox"/>	0203	<input type="checkbox"/>	0204	<input type="checkbox"/>	0205	<input type="checkbox"/>	0206				



Select the cell to paste to and drag to select a range.

0002	1	0003	2	0102	3	0103	4	0112	5	0113	6				
AI channel															
<input type="checkbox"/>	0001	<input checked="" type="checkbox"/>	0002	<input checked="" type="checkbox"/>	0003	<input type="checkbox"/>	0004	<input type="checkbox"/>	0005	<input type="checkbox"/>	0006	<input type="checkbox"/>	0007	<input type="checkbox"/>	0010
DI channel															
<input type="checkbox"/>	0101	<input checked="" type="checkbox"/>	0102	<input checked="" type="checkbox"/>	0103	<input type="checkbox"/>	0104	<input type="checkbox"/>	0105	<input type="checkbox"/>	0106	<input type="checkbox"/>	0107	<input type="checkbox"/>	0110
<input type="checkbox"/>	0111	<input checked="" type="checkbox"/>	0112	<input checked="" type="checkbox"/>	0113	<input type="checkbox"/>	0114	<input type="checkbox"/>	0115	<input type="checkbox"/>	0116				
DO channel															
<input type="checkbox"/>	0201	<input checked="" type="checkbox"/>	0202	<input checked="" type="checkbox"/>	0203	<input type="checkbox"/>	0204	<input type="checkbox"/>	0205	<input type="checkbox"/>	0206				



Press Ctrl+V to paste.

0002	1	0003	2	0102	3	0103	4	0112	5	0113	6	0202	7	0203	8
AI channel															
<input type="checkbox"/>	0001	<input checked="" type="checkbox"/>	0002	<input checked="" type="checkbox"/>	0003	<input type="checkbox"/>	0004	<input type="checkbox"/>	0005	<input type="checkbox"/>	0006	<input type="checkbox"/>	0007	<input type="checkbox"/>	0010
DI channel															
<input type="checkbox"/>	0101	<input checked="" type="checkbox"/>	0102	<input checked="" type="checkbox"/>	0103	<input type="checkbox"/>	0104	<input type="checkbox"/>	0105	<input type="checkbox"/>	0106	<input type="checkbox"/>	0107	<input type="checkbox"/>	0110
<input type="checkbox"/>	0111	<input checked="" type="checkbox"/>	0112	<input checked="" type="checkbox"/>	0113	<input type="checkbox"/>	0114	<input type="checkbox"/>	0115	<input type="checkbox"/>	0116				
DO channel															
<input type="checkbox"/>	0201	<input checked="" type="checkbox"/>	0202	<input checked="" type="checkbox"/>	0203	<input type="checkbox"/>	0204	<input type="checkbox"/>	0205	<input type="checkbox"/>	0206				

Note

- When you attempt to copy and paste values, Internet Explorer may show the message "Do you want to allow this webpage to access your clipboard?" Click **Allow** access to enable the copy and paste feature of this software. If you click **Don't allow**, you will not be able to use the copy and paste feature.
- If the cells whose check box is selected (on) reaches the maximum selectable number, cells whose check boxes are unselected become unavailable, and you will not be able to paste to them. You cannot paste to cells that do not have check boxes.
- Pasting is not possible to character strings that cannot be edited or passwords (concealed character strings).
- When option buttons or list boxes are selected, only the selected character strings can be copied and pasted.

Explanation

The configuration windows of this software can be classified into three window types. First is the list type, as in the **Trend settings** window. Second is the table type, as in the **AI channel settings** window. Third is the check box sheet type, as in the **Channel set** window of **Group settings**. The table below shows the differences in how you edit items for each window type.

Window Type	Selectable Range	Selection Method	Selection Cancellation Method	Limitations
List type	<ul style="list-style-type: none"> • By lines. • Multiple lines across different setup items can be selected. 	Click the name of the line to select the entire line. Drag across the names of lines to select multiple lines.	Click a location other than a line name and within the setup item edit area.	Multiple lines cannot be selected one by one. Columns cannot be selected individually.
Table type	<ul style="list-style-type: none"> • One or multiple lines. 	Click the name of the line to select the entire line. Drag across the names of lines to select multiple lines.	Click a location other than the line name.	If you click a cell in a different line, the selection of previously selected cells will be cleared.
Check box sheet type	<ul style="list-style-type: none"> • By cells. • A rectangular region can be selected. 	Click a label in a cell to select a single cell. Drag the cursor diagonally to select a rectangular area. Selection can be made across different setup item blocks.	Click an area within the check sheet without holding the Ctrl key.	If the cells that are On reaches the maximum selectable number, cells whose check boxes are not selected become unavailable.

Editing Using Tool Buttons

On table type configuration windows, you can use the tool buttons that are shown at the bottom of each table. Each tool button is assigned a function. You can use them to edit items collectively.

The available types of tool buttons are **Initialize**, **Paste to all lines**, **Increment**, **Minimize/Maximize**, and **Change all**.

Tool button types and functions: ► See the [table on the next page](#).

In the operation example below, the **Paste to all tool** button is used to set the **Type** of all selected channels to the same value.

Procedure

- 1 On the table type configuration window (the AI channel settings configuration window in this example), select the lines that contain the data that you want to copy. CH0001 is selected.

Select the line to copy from.

Data to copy

CH	Type	Range	Span Lower	Span Upper	Calculation
0001	Volt	2V	-2.0000	2.0000	Off
0002	GS	1-5V	1.0000	5.0000	Linear scaling
0003	GS	1-5V	1.0000	5.0000	Linear scaling
0004	GS	1-5V	1.0000	5.0000	Linear scaling
0005	Volt	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off

Paste destination

- 2 Drag the cursor to the last line that you want to assign the same type. CH0001 to CH0004 are selected.

CH	Type	Range	Span Lower	Span Upper	Calculation
0001	Volt	2V	-2.0000	2.0000	Off
0002	GS	1-5V	1.0000	5.0000	Linear scaling
0003	GS	1-5V	1.0000	5.0000	Linear scaling
0004	GS	1-5V	1.0000	5.0000	Linear scaling
0005	Volt	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off

- 3 Click the **Past to all** button on the tool bar.

CH	Type	Range	Span Lower	Span Upper	Calculation
0001	Volt	2V	-2.0000	2.0000	Off
0002	GS	1-5V	1.0000	5.0000	Linear scaling
0003	GS	1-5V	1.0000	5.0000	Linear scaling
0004	GS	1-5V	1.0000	5.0000	Linear scaling
0005	Volt	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off
0007	Volt	2V	-2.0000	2.0000	Off
0008	Volt	2V	-2.0000	2.0000	Off
0009	Volt	2V	-2.0000	2.0000	Off
0010	Volt	2V	-2.0000	2.0000	Off

Click here







The type of CH0002 to CH0004 is set to **Volt**.

CH	Range				
	Type	Range	Span Lower	Span Upper	Calculation
0001	Volt	2V	-2.0000	2.0000	Off
0002	Volt	2V	1.0000	2.0000	Linear scaling
0003	Volt	2V	1.0000	2.0000	Linear scaling
0004	Volt	2V	1.0000	2.0000	Linear scaling
0005	Volt	2V	-2.0000	2.0000	Off
0006	Volt	2V	-2.0000	2.0000	Off

Note

- When you use the tool button to paste data, the values are automatically corrected in the same way as when you enter values directly.
- Tool buttons are unavailable when no cells are selected (except for the **Change all** button).

The table below shows the different tool button types and their functions.

Button	Icon	Function
Past to all		Pastes the value in the first selected line to all other lines.
Increment		<ul style="list-style-type: none"> • For numeric input Pastes numbers to all selected lines by auto-incrementing the least significant digit, based on the number in the first selected line. • For character string input Pastes the character string of the first line appended with auto-incremented sequence numbers to all selected lines. If the character string of the first selected line ends with a number, this number will be used as the first sequence number. If the character string of the first selected line ends with a character, the sequence number 1 is appended to the character string of the first selected line.
Initialize		Initializes the values of the selected lines to their defaults.
Minimize		Sets the values of the selected lines to their minimum values.
Maximize		Sets the values of the selected lines to their maximum values.
Change all		<ul style="list-style-type: none"> • For check boxes Switches the check box values of the selected lines at once. If all the check boxes of the selected lines are selected, they are cleared. If they are cleared, they are selected. • For line name columns Selects or unselects all lines in the table.

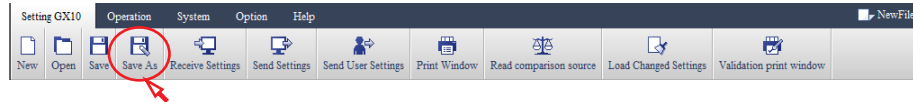
2.4 Saving Setup Data

2.4.1 Saving a Setup Data File

This section explains how to save a setup data file to your PC.

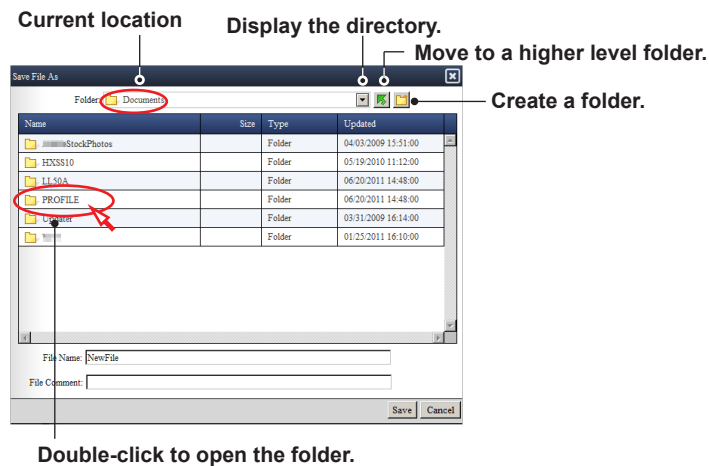
Procedure

- 1 Click **Setting** tab and then **Save As**.

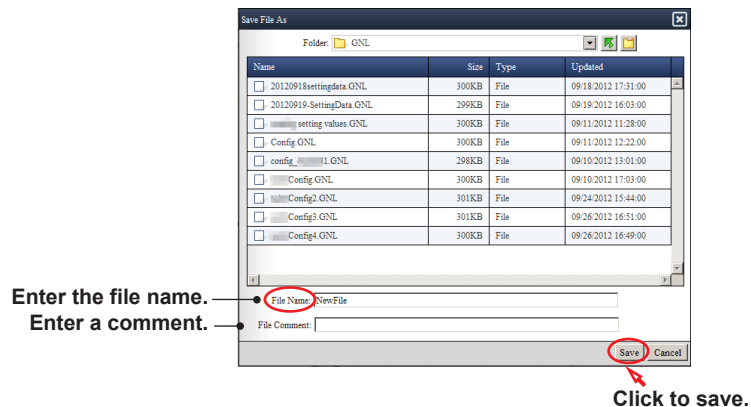


The **Save As** dialog box appears.

*: The subsequent times you open the dialog box, The first time you open this dialog box, Folder will be set to My Documents. Folder will show the last location that you opened or save to.



- 2 Specify the folder to save to, enter the file name, and click **Save**.



If a file with the same name exists in the folder, an overwrite confirmation message will appear. Click **OK** or **Cancel**.

If you click **OK**, the setup data file (.GNL, or .GSL extension) will be saved to the specified folder.

Note

- The GX/GP cannot load setup files whose names contain non-alphabet characters (such as Japanese and Korean). Therefore, if you need to load such files in the GX/GP, do not use non-alphabetic characters.
- The maximum file path length (including the file name) is 256 characters. If this limit is exceeded, an error will occur. Pay attention to the hierarchical depth and file name length.
- The following characters cannot be used in file names or folder names.

Prohibited characters	Name
/	Slash
> <	Inequality signs
:	Colon
?	Question mark
"	Double quotation
'	Single quotation
\	Backslash
*	Asterisk
	Pipe
;	Semicolon

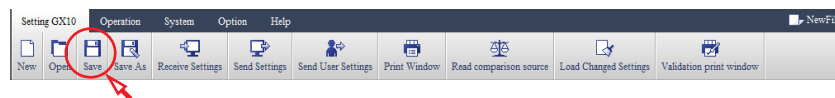
- You can enter up to 50 characters for the comment.

Save

Click **Setting** tab and then **Save** to save the edited contents to the current file.

If the file has not been saved yet, clicking **Save** will result in the same operation as clicking **Save As**.

Click the **Setting** tab and then **Save**.



A setup data file (.GSL extension) saved with GX/GP/GM with the advanced security function (/AS) cannot be overwritten. Save it to a new file (using Save As).

2.5 Initializing Setup Data

If you change the setup data on this software, the changes are stored and will appear the next time you start the software. If you want to view or change the current system configuration, follow the procedure in section 2.5.1. If you do not want to change the current system configuration but initialize the setting value only, follow the procedure in section 2.5.2.

Note

If you change the system configuration, the current setup data will be initialized. If you want to save the setup data that is currently displayed, save the file before changing the system configuration.

2.5.1 Viewing and Changing the System Configuration

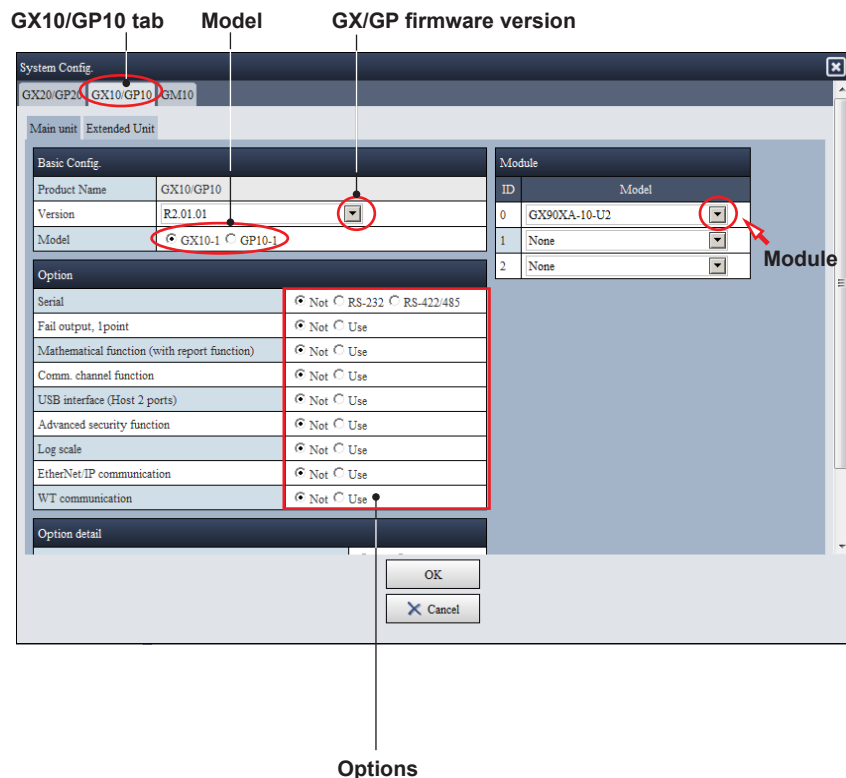
Procedure

- 1 Click **System** tab and then **System Config.**



The System Config. dialog box appears, showing the current system configuration.

- 2 If you just want to view the system configuration and not change it, click **Cancel**. To change it, select the option or module that you want to change.
How to set the System Config dialog box: ► [2.1.1 Creating a New File](#)



- 3 After you set the items, click **OK**.
The system is reconfigured, and the setup items for the new system configuration will appear.

2.5.2 Initializing Setup Data

Procedure

- 1 Click **System** tab and then **Initialize**.



The initialization confirmation dialog box appears.



- 2 Click **OK** to initialize.
Initialization will take place.

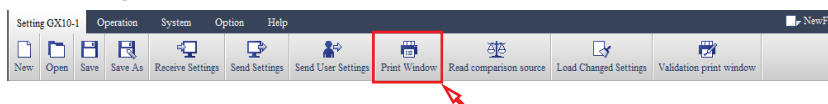
2.6 Printing Setup Data

You can display the current system configuration data and setup data in a separate window and print them. You can select what items to print.

2.6.1 Setting the Print Options

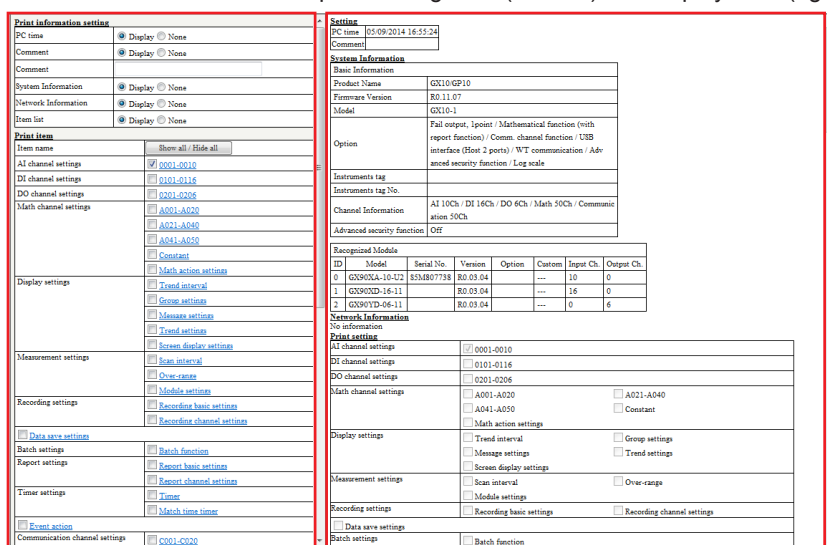
Procedure

- 1 Click **Setting** tab and then **Print Window**.



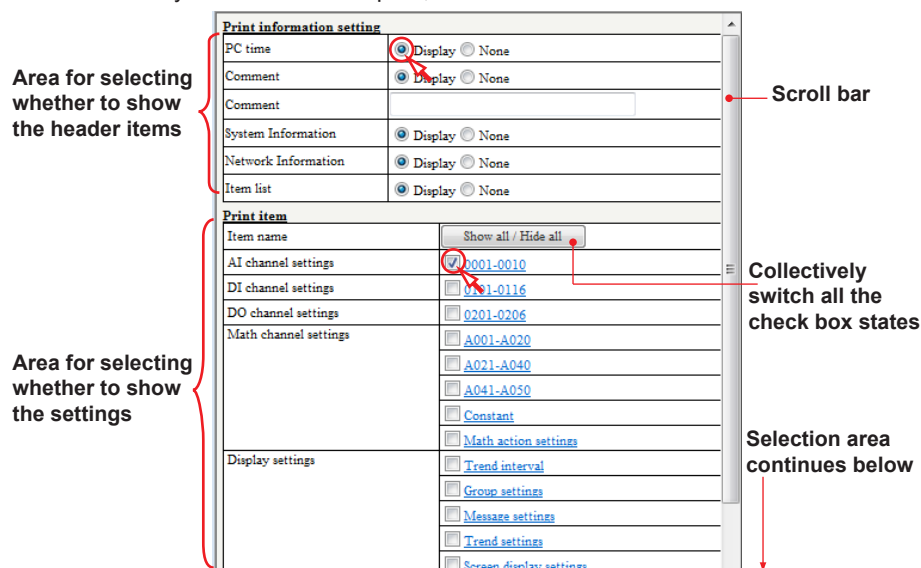
A separate window for printing opens.

The window is divided into the print setting area (left half) and display area (right half).



Area for setting print conditions Area for displaying the content to be printed

- 2 In the print setting area (left half), select which items to print. For each item that you want to print, select Display or select the check box. For the items that you do not want to print, select None or clear the check box.



The selections that you make are applied immediately to the window.
In the example shown below, an header item is changed.

Before changing the setting area

Print information setting	
PC time	<input checked="" type="radio"/> Display <input type="radio"/> None
Comment	<input checked="" type="radio"/> Display <input type="radio"/> None
Comment	
System Information	<input checked="" type="radio"/> Display <input type="radio"/> None
Network Information	<input checked="" type="radio"/> Display <input type="radio"/> None
Item list	<input checked="" type="radio"/> Display <input type="radio"/> None

System Information is set to None



After changing the setting area

Print information setting	
PC time	<input checked="" type="radio"/> Display <input type="radio"/> None
Comment	<input checked="" type="radio"/> Display <input type="radio"/> None
Comment	
System Information	<input type="radio"/> Display <input checked="" type="radio"/> None
Network Information	<input checked="" type="radio"/> Display <input type="radio"/> None
Item list	<input checked="" type="radio"/> Display <input type="radio"/> None

Before changing the display area

Setting	
PC time	05/12/2014 10:00:28
Comment	
System Information	
Basic Information	
Product Name	GX10-GP10
Firmware Version	R0.11.07
Model	GX10-1
Option	Fail output, Ipoint / Mathematical function (with report function) / Comm. channel function / USB interface (Host 2 ports) / W7 communication / Advanced security function / Log scale
Instruments tag	
Instruments tag No.	
Channel Information	AI 10Ch / DI 16Ch / DO 6Ch / Math 30Ch / Communication 30Ch
Advanced security function	OFF
Recognized Module	
ID	Model
0	GX90XA-10-12
1	GX90XD-16-11
2	GX90YD-08-11
Network Information	
No information	



After changing the display area

Setting	
PC time	05/12/2014 10:00:28
Comment	
Network Information	
No information	
Print setting	
AI channel settings	<input checked="" type="checkbox"/> 0001-0010
DI channel settings	<input type="checkbox"/> 0101-0116
DO channel settings	<input type="checkbox"/> 0201-0206
Math channel settings	<input type="checkbox"/> A001-A020 <input type="checkbox"/> A021-A040
	<input type="checkbox"/> A041-A050 <input type="checkbox"/> Constant
Display settings	<input type="checkbox"/> Math action settings
	<input type="checkbox"/> Trend interval <input type="checkbox"/> Group settings
	<input type="checkbox"/> Message settings <input type="checkbox"/> Trend settings
	<input type="checkbox"/> Screen display settings
Measurement settings	<input type="checkbox"/> Scan interval <input type="checkbox"/> Over-range
	<input type="checkbox"/> Module settings
Recording settings	<input type="checkbox"/> Recording basic settings <input type="checkbox"/> Recording channel settings

The System Information area is gone, and the AI channel settings have been shifted up.

- 3 When you have selected all the items that you want to print, click **Print** on the Web browser's **File** menu.
The Web browser's Print dialog box appears.
- 4 Click **OK**.
The setup data will be printed.

Note

- In the user settings of security settings, User ID and Password are printed with concealed characters (asterisks).
- To preview the print, on the **File** menu, click **Print Preview**.
- If you change settings while the Print window is displayed, to apply the changes to the window, click **Refresh** from the Internet Explorer's **View** menu.
- To set the page number, click Page Setup on the Internet Explorer's File menu.
- Configure the printer settings in accordance with your PC system.

Explanation

This section explains the print settings shown on the left side of the window.

Print information setting

The settings in this area specifies the printing of header items. The default values of all items are set to Display.
Changing an item to None clears the title and information from the display area on the right.

- In the Comment box, you can directly enter a comment (text). When Comment is set to Display, this text is displayed.

Print information setting	
PC time	<input checked="" type="radio"/> Display <input type="radio"/> None
Comment	<input checked="" type="radio"/> Display <input type="radio"/> None
Comment	<input type="text"/>
System Information	<input checked="" type="radio"/> Display <input type="radio"/> None
Network Information	<input checked="" type="radio"/> Display <input type="radio"/> None
Item list	<input checked="" type="radio"/> Display <input type="radio"/> None

- If Item list is set to Display, a list of settings to be printed is printed in the header area. This list reflects the items selected in Print item describe below.

The Item list is added to the print content when Item list is set to Display.

Print item	
Item name	Show all / Hide all
AI channel settings	<input checked="" type="checkbox"/> 0001-0010
DI channel settings	<input checked="" type="checkbox"/> 0101-0116
DO channel settings	<input checked="" type="checkbox"/> 0201-0206
Math channel settings	<input checked="" type="checkbox"/> 0301-0320
	<input type="checkbox"/> A001-A040
	<input type="checkbox"/> A041-A050
	<input type="checkbox"/> Constant
	<input type="checkbox"/> Math action settings
Display settings	<input type="checkbox"/> Trend interval
	<input type="checkbox"/> Group settings
	<input type="checkbox"/> Message settings
	<input type="checkbox"/> Trend settings
	<input type="checkbox"/> Screen display settings
Measurement settings	<input type="checkbox"/> Scan interval
	<input type="checkbox"/> Over-range
	<input type="checkbox"/> Module settings

Print setting	
DI channel settings	<input checked="" type="checkbox"/> 0001-0010
DO channel settings	<input checked="" type="checkbox"/> 0101-0116
Math channel settings	<input checked="" type="checkbox"/> 0201-0206
	<input type="checkbox"/> A001-A020
	<input type="checkbox"/> A021-A040
	<input type="checkbox"/> A041-A050
	<input type="checkbox"/> Constant
Display settings	<input type="checkbox"/> Trend interval
	<input type="checkbox"/> Group settings
	<input type="checkbox"/> Message settings
	<input type="checkbox"/> Trend settings
	<input type="checkbox"/> Screen display settings
Measurement settings	<input type="checkbox"/> Scan interval
	<input type="checkbox"/> Over-range
	<input type="checkbox"/> Module settings
Recording settings	<input type="checkbox"/> Recording basic settings
	<input type="checkbox"/> Recording channel settings
Batch settings	<input type="checkbox"/> Batch function
Report settings	<input type="checkbox"/> Report basic settings
	<input type="checkbox"/> Report channel settings
Timer settings	<input type="checkbox"/> Timer
	<input type="checkbox"/> Match time timer
Event action	<input type="checkbox"/> Event action
Communication channel settings	<input type="checkbox"/> C001-C020
	<input type="checkbox"/> C021-C040
	<input type="checkbox"/> C041-C050
Communication (Ethernet) settings	<input type="checkbox"/> Ethernet basic settings
	<input type="checkbox"/> FTP client settings
	<input type="checkbox"/> SMT client settings
	<input type="checkbox"/> SNT client settings

If you select the check boxes for the items you want to print, they are reflected in the Print item list.

Print item

Select the check boxes of the items to specify the settings to be printed.
By default, only the first item (e.g., AI channel settings) is selected. The check box conditions when you close the window are retained for the next time.

- Click **Show all/Hide all** to collectively select or clear all the Print item check boxes.

Print item	
Item name	Show all / Hide all
AI channel settings	<input checked="" type="checkbox"/> 0001-0010
DI channel settings	<input checked="" type="checkbox"/> 0101-0116
DO channel settings	<input checked="" type="checkbox"/> 0201-0206
Math channel settings	<input checked="" type="checkbox"/> A001-A020
	<input type="checkbox"/> A021-A040

- Clicking a title of the settings under Print item moves the display area on the right to the corresponding title.

Print information setting

PC time ☒ Display ☐ None

Comment ☒ Display ☐ None

System Information ☐ Display ☒ None

Network Information ☒ Display ☐ None

Item list ☒ Display ☐ None

Print item

Item name

AI channel settings ☒ 0001-0010

DI channel settings ☒ **0101-0116**

DO channel settings ☒ 0201-0206

Math channel settings ☒ A001-A020

☐ A041-A050

☐ Constant

☐ Math action settings

0101-0116

CH	Type	Range		Calculation	Reference channel	Decimal place	Scale		Unit
		Span Lower	Span Upper				Lower	Upper	
0101	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0102	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0103	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0104	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0105	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0106	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0107	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0108	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0109	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0110	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0111	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0112	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0113	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0114	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0115	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A
0116	DI	0	1	OFF	N/A	N/A	N/A	N/A	N/A

Jumped to "0101-0116"

Click "0101-0116"

2.6.2 Validation Print

The Validation print window is used to compare the setup data that you created to a setup data reference.

You can use the **Read comparison source** to load a comparison source file, compare the differences, and print them.

Loading the Comparison Source File: ► [2.2.2 Opening the Comparison Source File](#)

Procedure

- 1 Click **Setting** tab and then **Validation print window**.



A separate window for printing opens.

The screenshot shows the 'Validation Print' window. On the left, the 'Print information settings' pane is visible, containing sections for 'Print information', 'Print item', and 'Show Difference'. The 'Print item' section lists various settings like AI channel settings, DI channel settings, etc., with checkboxes for 'Display' or 'None'. The 'Show Difference' section has radio buttons for 'OFF', 'ON(ALL)', and 'ON(Only changes)'. The right pane displays the 'Print content' area, which includes fields for 'Title', 'Parameters Set', 'File Information', and a table for 'Recognized Module'.

Area for setting print conditions Area for displaying the content to be printed

- 2 In the print setting area shown on the left side of the window, select which items to print.
For the items that you want to print, select Display or select the check boxes. For the items that you do not want to print, select None or clear the check boxes.

- 3 If you want to display and print the differences between two files, under Print information setting, set Show Difference to Display.

“Show Difference”
Whether to include the difference

You can view the differences in the setup data in the print content on the right.

The procedure to set the print conditions is the same as that described in section [2.6.1 Setting the Print Options](#).

Explanation

This section explains the setting area shown on the left side of the Validation print window.

Print information setting

The settings in this area specifies the printing of header items.

Item	Selectable Range/Options	
Title	Text input (up to 64 characters)	The entered text is reflected in the header of the print display area.
Protocol No.	Text input (up to 32 characters)	Same as above
System Information	Display, None	Selecting Display shows the item in the display area on the right.
Item list	Display, None	Selecting Display prints a list of the print item settings in the header area. The items in this list are the same as those selected under Print item.
Show Difference (Note)	None	The difference is not displayed.
	ON (All)	Items that are different and those that are not are both displayed (printed).
	ON (Only changes)	The details of only the items that are different are displayed (printed). For items that are not different, only their titles are displayed.

Note

- Show Difference is valid only when a comparison source file has been specified.
- If Show Difference is set to ON (ALL), the comparison source settings are printed with strikethroughs. Items that are the same are printed in the same manner as normal printing.

0001-0010											
CH	Range					Scale					Verified
	Type	Range	Span Lower	Span Upper	Calculation	Reference channel	Decimal place	Lower	Upper	Unit	
0001	Volt	2V	-2.0000	2.0000	Delta Off	0001	N/A	N/A	N/A	N/A	
0002	TC	K	-270.0	1370.0	Off	N/A	N/A	N/A	N/A	N/A	
0003	Volt	200mV	-200.00	200.00	Off	N/A	N/A	N/A	N/A	N/A	
0004	RTD	Pt100	-200.0	850.0	Off	N/A	N/A	N/A	N/A	N/A	
0005	Volt	200mV	-200.00	200.00	Off	N/A	N/A	N/A	N/A	N/A	
0006	Skip Volt	N/A 2V	N/A -2.0000	N/A 2.0000	N/A Off	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	
0007	Skip Volt	N/A 2V	N/A -2.0000	N/A 2.0000	N/A Off	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	
0008	TC Volt	K 2V	-270.0 -2.0000	1370.0 2.0000	Off Off	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	
0009	Volt	2V	-2.0000	2.0000	Off	N/A	N/A	N/A	N/A	N/A	
0010	Volt	2V	-2.0000	2.0000	Off	N/A	N/A	N/A	N/A	N/A	

- If Show Difference is set to ON (Only changes), only the lines with changes are printed as shown below. If all the items under a title have not changed, "No change" is printed under the title.

0001-0010											
CH	Range					Scale					Verified
	Type	Range	Span Lower	Span Upper	Calculation	Reference channel	Decimal place	Lower	Upper	Unit	
0001	Volt	2V	-2.0000	2.0000	Delta Off	0001	N/A	N/A	N/A	N/A	
0005	Volt	200mV	-200.00	200.00	Off	N/A	N/A	N/A	N/A	N/A	
0006	Skip Volt	N/A 2V	N/A -2.0000	N/A 2.0000	N/A Off	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	
0007	Skip Volt	N/A 2V	N/A -2.0000	N/A 2.0000	N/A Off	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	
0008	TC Volt	K 2V	-270.0 -2.0000	1370.0 2.0000	Off Off	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	

Print Item

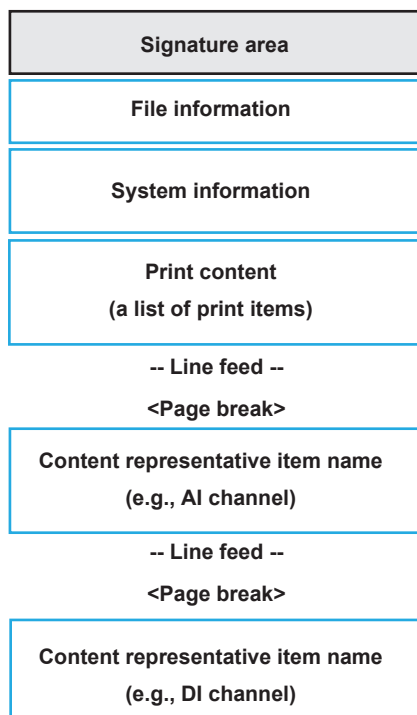
Select the check boxes for the items to specify the settings to be printed.

The procedure is the same as that described in "Print item" on page 2-44.

Print Contents

The following figure shows the structure of the print content shown on the right side of the Validation print window.

Of the item that are printed, those that are different from normal printing are described below.



Header

The header displays the title and protocol number entered under Print information setting and the PC timestamp of when the Validation print window was displayed. The timestamp is displayed in the format specified in the Display menu. The header appears at the top of each page in the print preview and in the actual print.

Protocol No.	Date 05/12/2014 13:13:48
Title	

Signature

The signature area is printed at the top of validation and for each content item name (e.g., AI channel settings, DI channel settings).

If the print item name is set to Hide all, it is only displayed at the top of validation. If all the settings under an item have not changed, only the item name and signature area are displayed.

	Printed Name	Signature	Date
Parameters Set			
Reviewed			
Approved			

File Name

The file path, Setting Number, File Date, and Verified are displayed in a table.

The following figure is for when Show Difference is set to Display. The top line is the comparison source file.

File Information			
File Name	Setting Number	File Date	Verified
C:\Users\... Desktop\GX_GP_R2_Software\01.config\Testfiles\GNL\compare1.gnl (Comparison source)			
C:\Users\... Desktop\GX_GP_R2_Software\01.config\Testfiles\GNL\base1.gnl			
Show Difference			
Show Difference	Verified		
ON(Only changes)			

Note

Setting Number and File Date are displayed only for setup files that have been created on a GX/GP with the advanced security function (/AS) set to On. N/A is displayed if Setting Number is not available.

System Information

Displays the GX/GP system information. In the case of validation, a confirmation column is added to the right of the table.

System Information								
Basic Information							Verified	
Product Name	GX10/GP10							
Firmware Version	R0.11.07							
Model	GX10-1							
Option	RS-422/485 / Fail output, 1point / Mathematical function (with report function) / Comm. channel function / USB interface (Host 2 ports) / EtherNet/IP communication / WT communication / Advanced security function / Custom display function / Logs							
Instruments tag								
Instruments tag No.								
Channel Information	AI 10Ch / DI 16Ch / DO 6Ch / Math 50Ch / Communication 50Ch							
Advanced security function	Off							
Recognized Module								
ID	Model	Serial No.	Version	Option	Custom	Input Ch.	Output Ch.	Verified
0	GX90XA-10-U2		R0.11.07		---	10	0	
1	GX90XD-16-11		R0.11.07		---	16	0	
2	GX90YD-06-11		R0.11.07		---	0	6	

Print Item

The settings of the items selected under Print item are printed. In the case of validation, a confirmation column is added to the right of the table. The following figure is for when Show Difference is set to ON (Only changes).

Security settings

	Printed Name	Signature	Date
Parameters Set			
Reviewed			
Approved			

Security basic settings

Security function		Verified
Communication	<div>Off</div> <div>Login</div>	

User settings

User number	User level	Mode	User name	Password	User property	Authority number	Verified
1	<div>Root</div> <div>Admin</div>	<div>Root</div> <div>Touch operation + Communication</div>			N/A	N/A	
2	<div>Root</div> <div>Root</div>	<div>Root</div> <div>Root</div>			Root	N/A	

Security Settings

In the user settings of security settings, User name, User ID, and Password are left empty in the print.

- Difference display example for when the advanced security function (/AS) is not available or is set to Off

Security settings

	Printed Name	Signature	Date
Parameters Set			
Reviewed			
Approved			

Security basic settings

Security function		Verified
Communication	Off Login	

User settings

User number	User level	Mode	User name	Password	User property	Authority number	Verified
1	Admin	Touch operation + Communication			N/A	N/A	
2	User	Touch operation + Communication			Off	N/A	
3	User	Touch operation			Off	N/A	
4	Off	N/A			N/A	N/A	

- Difference display example for when the advanced security function (/AS) is set to On

Security settings			
	Printed Name	Signature	Date
Parameters Set			
Reviewed			
Approved			
Security basic settings			
No change			
User settings			
User number	User level	Mode	User name User ID Password Password expiration Verified
4	User	Touch operation + Communication	
	Off	N/A	Off N/A
User number	User property	Authority number	Sign in property Authority of sign in Verified
4	Off	N/A	Off N/A
	N/A		
User property			
No change			
Sign in settings			
Data file transfer		Verified	
FTP transfer timing	Sign in		
	Data save		
Sign in property			
No change			

Note

Even if items in the comparison source data are set to off, some of them are displayed in the show difference window when the print setting is set to on.

In such a case, the difference is displayed by assuming the comparison source data to be invalid (N/A). The following figure is a display example for Batch text.

Security settings			
	Printed Name	Signature	Date
Parameters Set			
Reviewed			
Approved			
Security basic settings			
No change			
User settings			
User number	User level	Mode	User name User ID Password Password expiration Verified
4	User	Touch operation + Communication	
	Off	N/A	Off N/A
User number	User property	Authority number	Sign in property Authority of sign in Verified
4	Off	N/A	Off N/A
	N/A		
User property			
No change			
Sign in settings			
Data file transfer		Verified	
FTP transfer timing	Sign in		
	Data save		
Sign in property			
No change			

Note

- To preview the print, on the **File** menu, click **Print Preview**.
- If you change settings while the Validation print window is displayed, to apply the changes to the window, click **Refresh** from the Internet Explorer's **View** menu.
- To set the page number, click **Page Setup** on the Internet Explorer's **File** menu.
- Configure the printer settings in accordance with your PC system.

3.1 Receiving and Sending Setup Data

You can connect to a GX/GP or GM and receive setup data from it and send setup data to it.

Before Sending or Receiving Setup Data

- Some operations are limited by the status of the connected main unit.
Limitation on **Operation** tab depending on the main unit status: ► [“Tables” on page 3-17](#)
- Before exchanging setup data with the main unit, check the system configuration. If the configuration between the main unit and the software is not the same, settings may not be set properly.
System configuration: ► [“Step 4” on page 2-2](#)
- Before sending or receiving setup data, we recommend that you reconfigure the main unit. Reconfiguration allows modules installed in the main unit to be detected and the system configuration to be confirmed.
- If a GM is connected, reconfiguration can be performed from this software. With a GX/GP, reconfiguration is possible only from the main unit screen.
Reconfiguring GM: ► [“Performing Reconfiguration \(When the connected device is a GM\)” on page 3-16](#)
Reconfiguring GX/GP: ► [“Reconfiguring the GX/GP” on GX10/GX20/GP10/GP20 Paperless Recorder First Step Guide \(IM 04L51B01-02EN\).](#)

Sending and Receiving Security Settings and Data

- If on the recorder, Security settings - Basic settings - Communication is set to Login, send data using an administrator user name. Otherwise, a portion of the data such as security settings will not be applied to the recorder.
- Whether setup data can be sent or received depends on the security settings as shown in the following table.

The GX/GP/GMs Security settings	Settings That Are Sent and Received			
	General settings (other than security settings)		Security settings	
	Reception	Transmission	Reception	Transmission
Security settings - Basic settings - Communication: Off	Yes	Yes	Yes	Yes
User level: Admin	Yes	Yes	Yes	Yes
User level: User, and User property not set ¹	Yes	Yes	Yes ¹	No ¹
User level: User, and User property and Setting operation are set to Lock ²	Yes	No ²	Yes	No ²

¹ If general settings can be sent but not security settings, “W013: Failed to set any settings.” will be displayed at the time of data transmission.

² If both general and security settings cannot be sent, “W014: Permission denied” will be displayed at the time of data transmission.

Receiving and sending when the advanced security function (/AS) is On: ► [Ch.4 Receiving and Sending Setup Data](#)

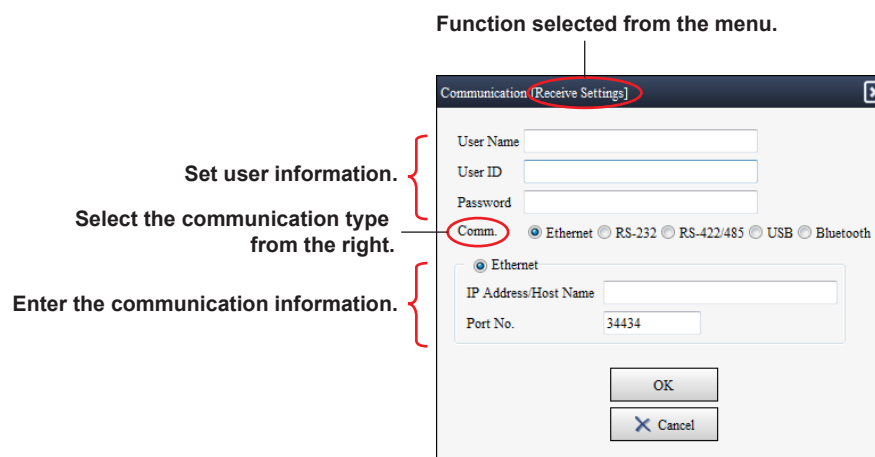
3.1.1 Receiving Setup Data

Procedure

- 1 Click the **Setting** tab and then **Receive Settings**.



A Communication dialog box appears.

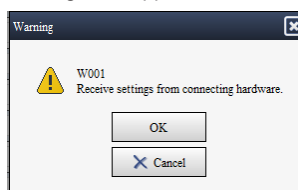


Note

If the GX/GP/GM's Security settings - Basic settings - Communication is set to Login, you need to specify the user information. If set to Off, you only need to enter the communication information to establish a connection. For details on security settings, see the main unit user's manual (GX/GP: IM 04L51B01-01EN, GM: IM 04L55B01-01EN).

- 2 Enter the communication information for connecting to the main unit.
See **"Explanation"** on page 3-3 for the details.

- 3 Enter the information, and click **OK**.
A confirmation message for receiving data appears.



- 4 To start receiving, click **OK**.
Settings are received from the recorder and displayed. The file name display shows "NewFile."

Explanation

The items in the Communication dialog box are described below.

User Name and Password

Enter the user information to log in to the recorder via communication. You do not have to enter this information if the main unit's Security settings > Communication is set to Off. If the main unit's Security settings - Communication is set to Login, enter the user name and password registered in the main unit. When logging in for the first time, enter the default password.*

The subsequent times, the user name that you entered previously will appear, so you will only need to enter the password.

- You can enter up to 20 characters. If you exceed this limit, the exceeded portion will be cut.
- The characters that you can enter are ASCII characters other than single quotation, semicolon, or space.
 - * The default password is the password that you use when you log in for the first time. It is provided in the main unit user's manual.

User ID

If the advanced security function (/AS) is enabled, use the user ID in combination with the user name and password shown above. You must enter the user ID if the main unit's advanced security function (/AS) is set to On, Security settings > Communication is set to Login, and User ID is in use.

User authentication when the advanced security function is On: ► **“Setup Data for GX/GP/GM with Advanced Security Function (/AS)”**

Comm.

Select the communication type from Ethernet, serial communication (RS-232 or RS-422/485), USB, or Bluetooth. Bluetooth can be used only when the main unit is a GM with the /C8 option.

Ethernet

IP address and host name that you enter will be stored and will appear the next time you open the dialog box.

- You can enter up to 128 characters. If you exceed this limit, the exceeded portion will be cut.
- The characters that you can enter are the alphabet (A to Z, a to z), numbers (0 to 9), hyphens, and dots.

The port number is the port number of the recorder that you want to connect to. If you have changed the recorder port number, enter that port number.

- Default value: 34434 (selectable range: 1 to 65535)

RS-232, RS-422/485

Set the RS-232 and RS-422/485 parameters from the **Port No.**, **Baud rate**, and **Parity** lists. (Enter the RS-422/485 address in the **Address** box.) These values are also stored and will appear the next time you open this dialog box.

Communication	Setup Item	Default Value	Selectable Range
RS-232 RS-422/485	Port No.	The first number in the port number list in the selectable range.	A list of available COM port numbers is displayed. If none are available, COM1 to COM20 is displayed.
	Baud rate	9600	9600/19200/38400/57600/115200 bps
	Parity	EVEN	ODD/EVEN/NONE
RS-422/485	Address	1	1 to 99

- * “Available COM port numbers” are the numbers of ports recognized by Windows Device Manager (PC).

USB

This setting is for connecting through a USB cable. Select the **Port No.**

- Selectable range: A list of available COM port numbers.
 - Default value: The first number in the port number list in the selectable range.
- Specify the COM port number for USB Serial Port.

Note

- If your PC is connected to the Internet, the appropriate USB driver is downloaded automatically.
- If you make USB connection for the first time in the environment without Internet, install the driver to your PC beforehand. Check the download link for the driver at [our website](#).

Bluetooth (GM)

This setting is for Bluetooth communication. Select the **Port No.**

To check the COM port number of the GM you want to connect to, see “Checking the COM Port for Bluetooth Connection (Windows 7 example),” explained later.

- Selectable range: A list of available COM port numbers.
- Default value: The first number in the port number list in the selectable range.

Enter the password for Bluetooth if the main unit’s Bluetooth connection password is set to On. This is not necessary if it is set to Off. (See the Note below.)

- Default value: 1234

Note

Note the following points when you connect GM to your PC via Bluetooth.

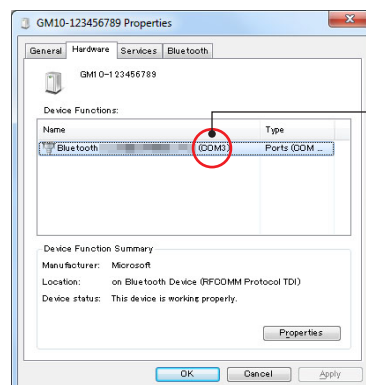
- The GM’s Bluetooth connection password is set to on by default. If you connect for the first time, you need to enter the default password (1234).
- Press the USER1 key of the GM for 3 seconds. “BT” LED (orange) is lit to indicate the GM is ready for the connection. If it does not lit, the Bluetooth function is off.
- Bluetooth driver may be necessary depending on the PC. For details, refer to the instruction manual of your PC or the Bluetooth interface.

Checking the COM Port for Bluetooth Connection (Windows 7 example)

The following procedure assumes that the GM has already been added as a Bluetooth device on the PC (the GM and PC are already communicating through a Bluetooth connection). Use it as a reference when checking the COM port number of the GM you want to connect.

Procedure

- 1 Click the Windows Start button, and on the start menu, click **Devices and Printers**. The GM appears under Devices.
- 2 Right-click the GM icon, and click **Properties**. The Properties window appears.
- 3 Click the **Hardware** tab.
- 4 Check the COM port number shown in the **Name** column under **Device Functions**.



Note

- USB and Bluetooth connections are handled as serial communication inside the PC. When the appropriate driver is installed in the PC and the PC is connected to a GM, the connection appears as a COM port in the Windows Device Manager.
- If you change the COM port number from Windows Device Manager, restart the PC. Otherwise, the new setting may not take effect.
- The serial communication parameters in this software are fixed at 8-bit data lengths and 1-bit stop bit.

COM Port When Serial Communication, USB, or Bluetooth Is Selected

If you set the communication type to serial communication, USB, or Bluetooth, available COM port numbers are detected and displayed in the Port No. list. If available ports are not detected, COM1 to COM20 are displayed in the list (software version R2.03 and later). The following are possible reasons why ports may not be detected.

- The ports that you want to use are disabled in Windows Device Manager.
- The driver for the relevant connection type is not installed in the PC.

The method to check ports and drivers varies depending on the PC or operating system that you are using.

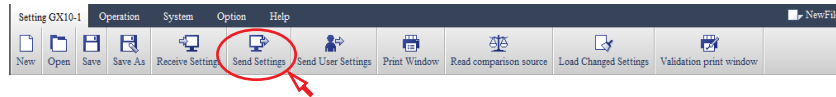
For details, see the PC or interface user's manual, support website, or the like.

3.1.2 Sending Setup Data

You can send the current setup data to the main unit. This is not possible if the recorder is recording.

Procedure

- 1 Click the **Setting** tab and then **Send Settings**.



A dialog box for entering communication information appears.

- 2 Enter the information, and click **OK**.
Items in the Communication dialog box: ► [“Explanation \(Communication dialog box\)” on page 3-3](#)
- 3 To start sending, click **OK**.
The setup data will be sent.

Note

- If the Security settings - Basic settings - Communication is set to Login, only registered users will be able to send data.
- If you change the GX/GP's (firmware version R1.xx.xx) **Security settings - Basic settings - Communication** from **Off** to **Login** and send setup data, be sure to follow the procedure in [3.1.4 Changing the GX/GP's Security Settings \(GX/GP with firmware version R1.xx.xx\)](#)
- If settings are sent from Hardware Configurator when the Web application is monitoring data (e.g., trend monitor), the setting changes may not be communicated properly to the Web application. In such a case, restart the Web application (Internet Explorer).

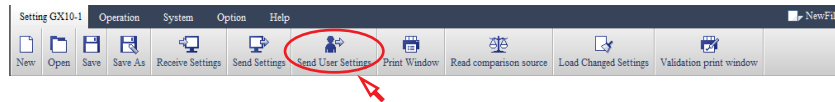
3.1.3 Sending User Settings

You can send only the user settings to the main unit via communication. You can perform this operation even when the recorder is recording or computing.

Details on user settings: ► GX/GP: Section 1.9 in the *Models GX10/GX20/GP10/GP20 Paperless Recorder User's Manual* (IM 04L51B01-01EN), GM: Section 2.22 in the *Data Acquisition System GM User's Manual* (IM04L55B01-01EN).

Procedure

- 1 Click **Setting** tab and then **Send User Settings**.



A dialog box for entering communication information appears.

- 2 Enter the information, and click **OK**.
Items in the Communication dialog box: ► [“Explanation \(Communication dialog box\)” on page 3-3](#)
- 3 To start sending, click **OK**.
The setup data will be sent.

Note

////////////////////////////////////
If you are logged in and you change the user information and send it to the GX/GP with firmware version R1.xx.xx, errors will occur when you send subsequent setup commands. To change your user information in the GX/GP from the software via communication, be sure to follow the procedure in [“Changing User Information in the GX/GP via Communication”](#) of [section 2.5.4](#).
////////////////////////////////////

3.1.4 Changing the GX/GP's Security Settings (GX/GP with firmware version R1.xx.xx)

The procedure described in this section is necessary if you are using GX/GP firmware version R1.xx.xx. If you are using R2.xx.xx or later, you can set the login function according to section [3.1.2 Sending Setup Data](#) and send user information according to section [3.1.3 Sending User Settings](#).

You can download the latest firmware from the [YOKOGAWA website](#).

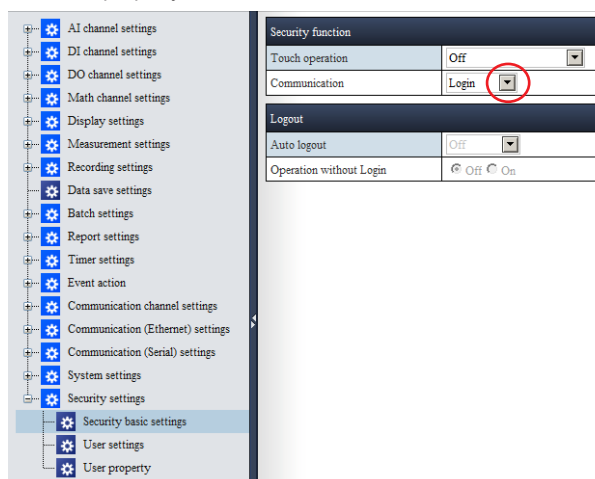
Changing the GX/GP Communication Login Function from Off to Login

The procedure below is for enabling the GX/GP communication login function from Hardware Configurator. Follow the procedure below to change the GX/GP's Security settings - Basic settings - Communication from Off to Login from the software via communication. This allows only registered users to access the GX/GP via communication.

To change the GX/GP communication login function from Login to Off: ► [3.1.2 Sending Setup Data](#)

Procedure

- From the content selection tree, select **Security settings - Security basic settings**, and set **Communication** under **Security function** to **Login**. User settings and User property are added to the tree content.



- From the contents selection tree, select **Security settings - User settings**, and register a user.

The first user is fixed to Admin.

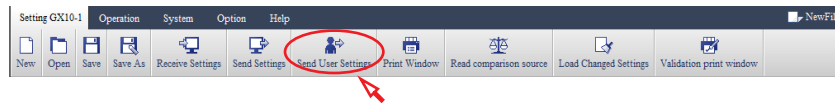
Select the mode.

Click to register a password.

User number	User level	Mode	User name	Password
1	Admin	Touch operation + Communication	User01	***** Change
2	User	Touch operation + Communication	User02	***** Change
3	Off	Touch operation + Communication	User03	***** Change
4	Off	Touch operation + Communication	User04	***** Change
5	Off	Touch operation + Communication	User05	***** Change

To register a password, click **Change**.

- 3** Click **Send User Settings** to send the user information.



A Communication dialog box appears.

- 4** Enter the information, and click **OK**.
The user information will be sent.

- 5** Click **Send Settings**.



A Communication dialog box appears.

- 6** A dialog box for entering communication information appears. From the user settings sent in step 3, enter the **User Name** and **Password** for the **Admin** user level.

User Name and Password
for the Admin user level

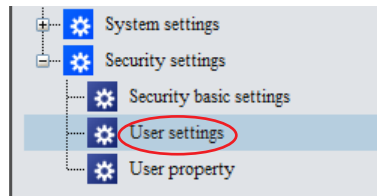
- 7** Click **OK** to send the settings.
The setup data will be sent.

Changing User Information in the GX/GP via Communication

Follow the procedure below to change the user information of a logged-in user from this software.

How to change the user information of other users (excluding your own): ► [3.1.2 Sending Setup Data](#), or [3.1.3 Sending User Settings](#)

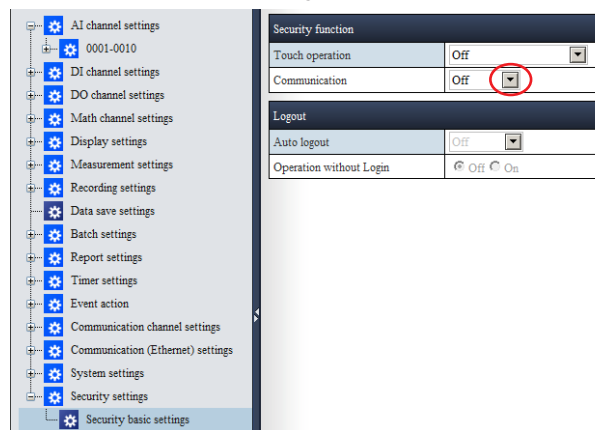
- 1 From the contents selection tree, select **Security settings - User settings**.



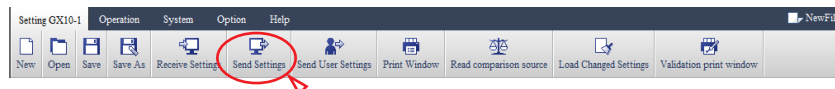
- 2 Change the user registration information, such as the user name and password.

User number	User level	Mode	User name	Password
1	Admin	Touch operation + Communication	User01	***** Change
2	User	Touch operation + Communication	User02	***** Change
3	Off	Touch operation + Communication	User03	***** Change
4	Off	Touch operation + Communication	User04	***** Change
5	Off	Touch operation + Communication	User05	***** Change

- 3 From the content selection tree, select **Security settings - Security basic settings**, and set **Communication** under **Security function** to **Off**.



- 4 For this step, use the user name and password for the Admin user level that were valid before you edited them in step 1. Click **Send Settings**.



A Communication dialog box appears.

5 Enter the old Admin user level information.

User Name and Password
for the old Admin user level

The GX/GP's **Security settings - Basic settings - Communication** is set to **Off**. At the same time, the user information edited in step 1 is set in the GX/GP.

6 From the content selection tree, select **Security settings - Security basic settings**, and change **Communication** under **Security function** to **Login**.

7 Enter the user name and password for the Admin user level that you edited in step 1, and click **Send Settings** again.

The GX/GP's **Security settings - Basic settings - Communication** returns to **Login**. This completes the updating of the user information.

3.2 Controlling the Main Unit

You can use this software to start and stop the recording and computing function, and display the hardware information of the main unit.

* Computation is an option.

3.2.1 Starting and Stopping Recording and Computing

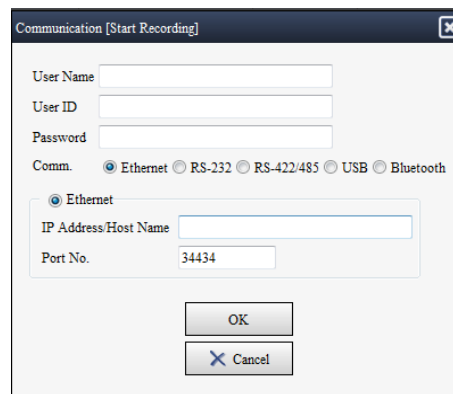
Procedure

- 1 Click **Operation** tab and then **Start Recording**, **Stop Recording**, **Start Computing**, or **Stop Computing**.

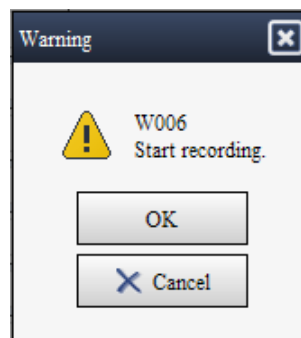


A Communication dialog box appears.

When you select a command on the Operation tab, a dialog box for setting communication parameters first appears. For details on the settings of the Communication dialog box, see the procedure in section [3.1.1 Receiving Setup Data](#). If the main unit's Security settings - Basic settings - Communication is set to **Login**, enter the user name and password registered in the main unit.



- 2 Enter the information, and click **OK**.
A confirmation message for starting or stopping appears.

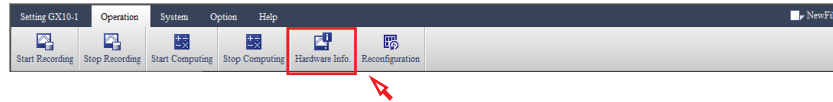


- 3 To execute the operation, click **OK**.
The recorder will start or stop recording or computing.

3.2.2 Viewing the Hardware Information

Procedure

- 1 Click **Operation** tab and then **Hardware Info.**



A Communication dialog box appears.

- 2 Enter the information, and click **OK**.

Basic Information									
Product Name	GX10-GP10								
Serial No.	XXXXXXXXXX								
MAC Address	XX-XX-XX-XX-XX-XX								
Firmware Version	R2.0.0.0								
Main Program	R2.0.0.0								
Web Program	R2.0.0.0								
Model	GX10-1								
Option	RS-422/485 / Fail output, Ipoint / Mathematical function (with report function) / Comm. channel function / USB interface (Host 2 ports) / EtherNet/IP communication / WT communication / Advanced security function / Custom display function / Log scale								
Instruments tag									
Instruments tag No.									
Channel Information	AI 10Ch / DI 0Ch / DO 0Ch / Math 50Ch / Communication 50Ch								
Advanced security function	Off								
Recognized Module									
ID	Status	Model	Serial No.	Version	Option	Custom	Input Ch.	Output Ch.	
0		GX90XA-10-U2	XXXXXXXXXX	R2.0.0.0			10	0	
1									
2									
Status Status									

The Hardware Information dialog box appears.

About displayed Information: ► **"Explanation" on page 3-14**

- 3 After you confirm, click **OK**.
Dialog box will close.

3

Connecting to the Main Unit

Explanation

The Hardware Information dialog box shows the following information.

Basic Information

- Product name: "GX20/GP20", "GX10/GP10", or "GM10"
- Serial No.
- MAC address
- Firmware version
- Model: GX20-1, GX10-1, GP20-1, GP20-2, GM10-1, GM10-2
- Option: The options detected by the recorder are listed in order.

Option		Displayed Characters
Serial communication interface	/C2	RS-232
	/C3	RS-422/485
VGA output	/D5	VGA output
Fail output	/FL	Fail output, 1point
Mathematical function with report function	/MT	Mathematical function (with report function)
Communication channel functions	/MC	Communication channel function
24 V DC/AC power supply	/P1	24VDC/AC power supply
USB interface (Host 2 ports)	/UH	USB interface (Host 2 ports)
Pre-installed modules	/Uxx0	Model pre-installed with analog (universal) input module
	/CRxx	Model pre-installed with digital output module(s) and/or digital input module(s)
EtherNet/IP communication	/E1	EtherNet/IP communication
WT communication	/E2	WT communication
Advanced security function	/AS	Advanced security function
Custom display function	/CG	Custom display function
LOG scale	/LG	Log scale
Bluetooth	/CB	Bluetooth (GM only)

- Instruments tag: Displays the instruments tag assigned to the GX/GP.
- Instruments tag No.: Displays the instruments tag number assigned to the GX/GP.
- Channel Information: Displays the number of AI, DI, DO, math, and communication channels.
- Advanced security function: Displays the status (On or Off) of the advanced security function (/AS) if the options is installed.
- IP Address: When the GM's DHCP is set to On, you can check the IP address that has been obtained automatically by connecting through a communication interface other than Ethernet.
- BD address: The Bluetooth BD address is displayed if the connected device is a GM with a Bluetooth option.

Recognized Module

- ID:
GX20, GP20: 0 to 9
GX10, GP10: 0 to 2
GM10: 0 to 9
- Status: Displays the recorder output status by icons and tooltips.

Display	Description (text appears on each tooltip)
None	No information
Light blue	GOOD
Yellow	WARNING
Red	ERROR
Blue(?)	INVALID
Yellow(!)	UNMATCH

- Model: Model name of the module. "-----" if it does not exist.
- Serial No.
- Version: Module firmware version
- Option
- Custom: Customization information. "-----" if it is standard.
- Input Ch.: Number of input channels
- Output Ch.: Number of output channels

Status

- Recording: The recorder is recording.
- Computing: The recorder is computing.
- Accessing Media: The recorder is accessing a storage medium.

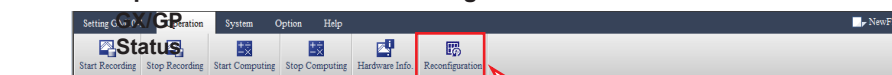
3.2.3 Performing Reconfiguration (When the connected device is a GM)

Reconfiguration of a GM can be performed from this software.

There are limitations to users that can perform reconfiguration. Note that reconfiguration of a GX/GP is not possible through communication from this software. (See Note.)

Procedure

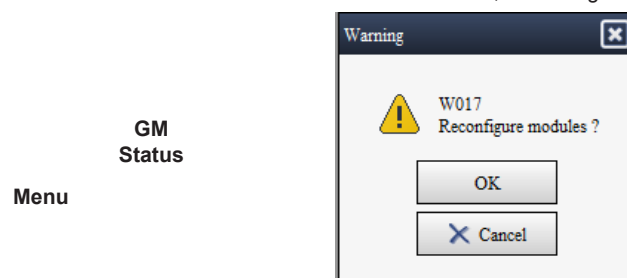
- 1 Click **Operation** tab and then **Reconfiguration**.



A Communication dialog box appears.

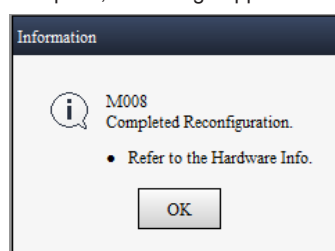
- 2 Enter the information, and click **OK**.

When a connection is established with the GM, a reconfiguration confirmation message appears.



- 3 Click **OK**.

When the reconfiguration is complete, a message appears.



View the reconfiguration results: ► [3.2.2 Viewing the Hardware Information](#)

Note

- If user permission is set on the GM main unit, only the following users can perform reconfiguration.
 - Admin users
 - Users whose System operation of User property is set to Free
- If you do not have permission to perform reconfiguration or if the main unit is not in a condition to be reconfigured, the error message "E021 This function is not possible at this time" appears. Related topic:
- Reconfiguration of a GX/GP is not possible through communication from this software. Reconfigure a GX/GP from the main unit screen. Operation: "Reconfiguring the GX/GP" on *GX10/GX20/GP10/GP20 Paperless Recorder First Step Guide* (IM 04L51B01-02EN).

Explanation**Limitation on Sending and Receiving Depending on the Main Unit Status**

Limitation is placed on sending and receiving of settings and using the Operation menu depending on the status of the connected main unit. The following table shows whether sending and receiving is possible for different main unit statuses.

GX/GP

	Recording	Computation	Reconfiguration ³	A/D calibration Encryption Update
Receive Settings	Yes	Yes	Yes ¹	No
Send Settings	No	No	Yes ¹	No
Send User Settings	Yes	Yes	Yes	No
Start Recording	Yes ²	Yes	No	No
Stop Recording	Yes	Yes	No	No
Start Computing	Yes	Yes ²	No	No
Stop Computing	Yes	Yes	No	No
Hardware Info.	Yes	Yes	Yes ¹	No
Reconfiguration³	No	No	No	No

Yes: Operation is possible. No: Operation is not possible (an error message will appear).

1 May be executed in a condition in which module configuration has not been confirmed. If this happens, the settings and hardware information will be different from the actual.

2 The recording or computing continues because it is already in progress. (Nothing happens even if start is executed.)

3 Reconfiguration of a GX/GP is not possible from this software.

GM

	Recording	Computation	Reconfiguration ¹	A/D calibration Encryption Update
Receive Settings	Yes	Yes	No	No
Send Settings	No	No	No	No
Send User Settings	Yes	Yes	No	No
Start Recording	Yes ¹	Yes	No	No
Stop Recording	Yes	Yes	No	No
Start Computing	Yes	Yes ²	No	No
Stop Computing	Yes	Yes	No	No
Hardware Info.	Yes	Yes	No ¹	No
Reconfiguration¹	No	No	No	No

Yes: Operation is possible. No: Operation is not possible (an error message will appear).

1 Operation from this software is not possible when the GM is reconfiguring.

2 The recording or computing continues because it is already in progress. (Nothing happens even if start is executed.)

Blank

4.1 Operation

This chapter explains how to use setup data files (.GSL extension)* for GX/GP/GM with the advanced security function (/AS).

- * Refers to setup data files that have been created on GX/GP/GM with the advanced security function (/AS) enabled. It also includes setup data created with Advanced security function On/Off under System config set to On in this software.

Note

For details on how to use and configure the advanced security function (/AS), see the *Advanced Security Function (/AS) User's Manual* (GX/GP: IM 04L51B01-05EN, GM: IM 04L55B01-05EN).

Creating Setup Data

For the procedure, see section [2.1 Creating New Setup Data](#)

Displaying Setup Data

You can load an existing setup data file (*.GSL) or measurement data file (*.GSE, *.GSD) from a PC and display the settings.

For the procedure, see section [2.2 Displaying Setup Data](#)

To display Security settings including user settings, authentication is required. For details, see section [4.2 User Authentication](#)

Editing Setup Data

For the procedure, see section [2.3 Editing Setup Data](#)

To edit Security settings including user settings, authentication is required. For the procedure, see section [4.2 User Authentication](#)

Note the following points when you edit settings with the advanced security function set to On. If you make a mistake in the settings, you may no longer be able to log in to the GX/GP/GM.

1. When using the password management function (KDC)
 - For Certification key under Communication (Ethernet) settings > KDC client settings, be particularly careful when entering Host principal and the password of the host user.
 - Be sure to include users that are registered on the KDC server side in the User settings of the GX/GP and GM.
 - Store the root user password in safe keeping.
 - If you forget or lose it, you will not be able to set Login back to Off in an emergency (such as when you can no longer log in due to an KDC setting error).
 - You can use the root user also to log in via communication from this software.
2. If On/Off under Security basic settings > User ID is changed, the User ID and Password in user settings are initialized.
3. If On/Off under Security basic settings > Password management is changed, the User ID and Password in user settings are initialized.
4. If Security basic settings > Password management is set to On, the User name setting is not shown in this software.

Saving Setup Data

For the procedure, see section [2.4 Saving Setup Data](#)

Note that overwriting is not possible.

Receiving and Sending Setup Data

For the procedure, see section [3.1.1 Receiving Setup Data](#) and section [3.1.2 Sending Setup Data](#)

Note

Before sending settings, check that an SD memory card is installed in the main unit. If the advanced security function is enabled, settings will not be sent if an SD memory card is not available.

Sending and Receiving on the Advanced Security Function

Even if the advanced security function is enabled, if the main unit's Security settings - Basic settings - Communication is set to **Off**, you can connect without entering the user information (user name and password).

Whether setup data can be sent or received depends on the security settings.

If the advanced security function is enabled, it is as shown in the following table.

Security settings - Basic settings of the main unit (The advanced security function: On)		Settings That Are Sent and Received			
		General settings (other than security settings)		Security settings	
		Reception	Transmission	Reception	Transmission
Touch operation and Communication are both set to Off		Yes	Yes	Yes	Yes
Touch operation is set to Login, and Communication is set to Off ^(Note)		Yes	No	Yes	No
Touch operation and Communication are both set to Login or Touch operation is set to Off and Communication is set to Login	Admin	Yes	Yes	Yes	Yes
	User User property not set	Yes	Yes	Yes	No
	User User property and Setting operation are set to Lock	Yes	No	Yes	No
	Monitor	Yes	No	Yes	No

Note

- If the main unit is the GM, the only login type is **Communication**.
- For the GX/GP whose advanced security function is set to **On**, **Touch operation** is set to **Login**, and **Communication** is set to **Off**, **Send Settings** is not possible from this software. (**Receive Settings** is possible.) If you want to apply the settings edited with this software to the main unit, save the setup file from the software. Then, log in to the main unit using touch operation, and load the file.

Starting and Stopping Recording and Computing

For the procedure, see section [3.2.1 Starting and Stopping Recording and Computing](#), [3.2.2 Viewing the Hardware Information](#), or [3.2.3 Performing Reconfiguration \(When the connected device is a GM\)](#).

Even if the advanced security function is enabled, if the main unit's Security settings - Basic settings - Communication is set to **Off**, you can connect without entering the user information (user name and password).

If the main unit's Security settings - Basic settings - Communication is set to **Login**, enter the user name and password registered in the main unit.

However, depending on the user level, there are limitations to controlling the main unit from this software.

- When the user level is **User**
 - If **User property - Record** is set to **Lock**, Start Recording and Stop Recording are not available.
 - If **User property - Math** is set to **Lock**, Start Computing and Stop Computing are not available.
 - If **User property - System** operation is set to **Lock**, Reconfiguration is not available.
- When the user level is **Monitor**
 - Only acquiring and viewing **Hardware Information** is possible. Other main unit operations are not possible.

Initializing Setup Data

Only the settings that are being edited are initialized.

For the procedure, see section [2.5 Initializing Setup Data](#)

Printing Setup Data

You can print setup data.

However, if the advanced security function is enabled, User name, User ID, and Password are printed with concealed characters (asterisks).

For the procedure, see section [2.6 Printing Setup Data](#)

Printing Validation Data

You can load a reference setup file, compare with the current setup data, and print the results.

For instructions on how to load a reference file, see [2.2.2 Opening the Comparison Source File](#)

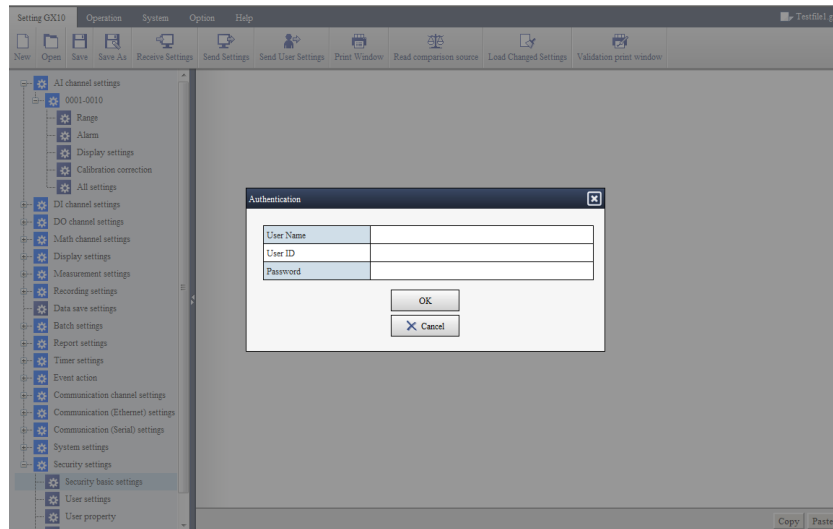
For information on how to configure validation printing, see section [2.6.2 Validation Print](#)

4.2 User Authentication

If the security function is in use in a system configuration where the advanced security function (/AS) is enabled, attempting to display the content under Security settings may trigger User authentication.

This section explains user authentication.

The following figure is an example of a window for when you select Security basic settings in a condition in which authentication is assumed to occur.



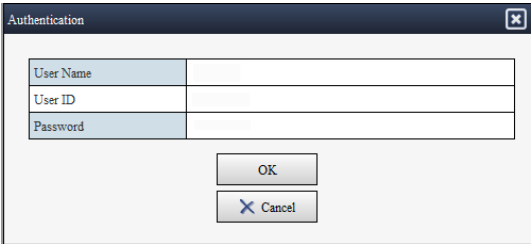
4.2.1 When User Authentication Occurs

When you open a setup file or execute Receive Settings, a User authentication dialog box appears if all the following conditions are met.

1. In System config, Advanced security function On/Off is set to On.
2. Under Security basic settings - Security function, Touch operation or Communication is set to Login.
3. An item belonging to Security settings is selected for displaying.
 - Security basic settings
 - User settings
 - User property
 - Sign in settings
 - Sign in property

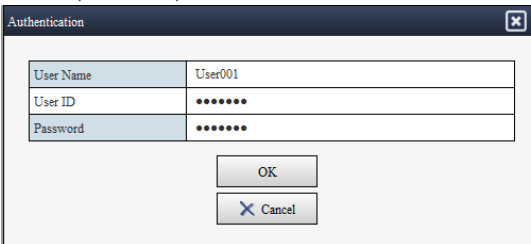
4.2.2 Entering Information in the User Authentication Dialog Box

This section describes the procedure to perform when a User authentication dialog box appears. If authentication is successful, you will be able to display and edit the items in Security settings.



Procedure

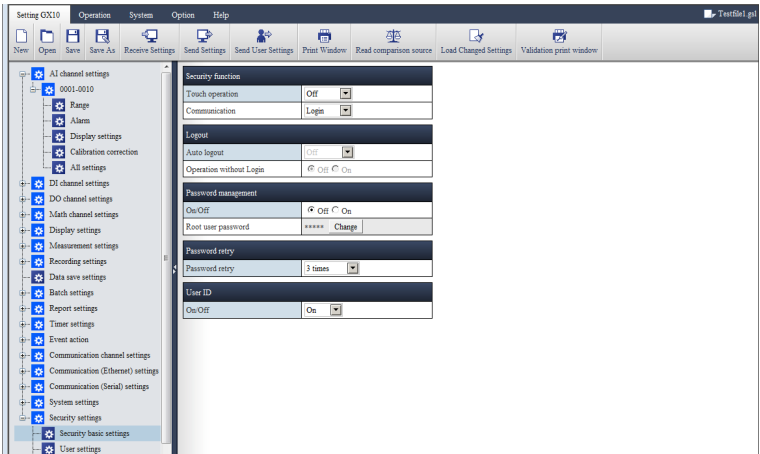
- 1 When a User authentication dialog box appears, enter the information of an “Admin” user in the **User name**, **User ID**, and **Password** boxes.



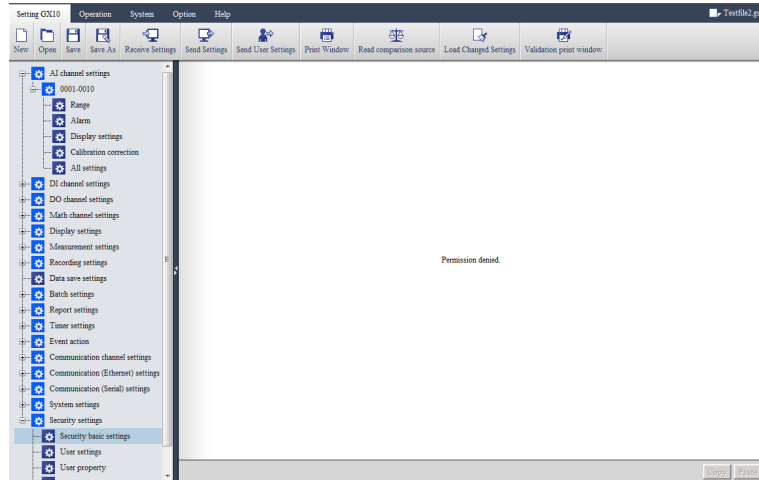
Note

- The “Admin” user refers to an “Admin” user in the user settings within the setup data that is opened.
- In some cases, User ID and Password may not appear. (See the explanation on the next page.)

- 2 Click **OK**.
The dialog box closes, and authentication takes place.
If the entered user information matches that of any “Admin” user in the setup data, the selected settings will appear.



If authentication fails, the message “Permission denied” will appear in the content area.



- 3 To retry authentication, select other items under Security settings. A User authentication dialog box will appear.

Explanation

The items in the User authentication dialog box are described below.

User name

Enter the user name of an “Admin” user in the user settings within the setup data.

User ID

Enter the user ID of an “Admin” user in the user settings within the setup data. The text that you enter will not be displayed. This is displayed only when Security basic settings > User ID is set to On in the setup data.

Password

Enter the password of an “Admin” user in the user settings within the setup data. The text that you enter will not be displayed. This is displayed only when Security basic settings > Password management is set to Off in the setup data.

Note

- Authentication will be successful when the information entered in the dialog box matches the user information (User name, User ID, and Password) of an “Admin” user in the user settings within the setup data.
- Once authentication is successful, you can display various security settings without authentication until the conditions for triggering authentication described earlier are met again.
- If user authentication fails, an error will appear. There is no limit on the number of times you can fail.

5.1 Errors and Messages

Message

Code	Message	Description and Corrective Action
None	The current password has expired. Input the new password.	This message appears if the password has not been changed from its default value or if the password has expired. To continue operation, change the password.
M001	Save changes to xxx?	File name confirmation.
M002	Receiving finished.	Reception completed successfully.
M003	Sending finished.	Transmission completed successfully.
M004	Recording started.	The recorder started recording.
M005	Recording stopped.	The recorder stopped recording.
M006	Computing started.	The recorder started computing.
M007	Computing stopped.	The recorder stopped computing.
M008	Completed Reconfiguration.	Main unit reconfiguration completed successfully.
M008 Auxiliary Messages	Refer to the Hardware Info.	You can view the results (current hardware information) of reconfiguration performed according to 3.2.2 Viewing the Hardware Information .

Warning Messages

Code	Message	Description and Corrective Action
No code	Input value is invalid. It is returned before the change.	An invalid value may have been entered in a setup item. Check the settings below. • User name of user registration (when a duplicate user name is entered)
W001	Receive settings from connecting hardware.	Reception confirmation. To continue, click OK . To cancel, click Cancel .
W002	Send settings to connecting hardware. If user level is not "Admin", some settings can not be set on the device.	Transmission confirmation. To continue, click OK . To cancel, click Cancel .
W003	Hardware and software configurations don't match. Continue sending data?	Transmission confirmation. To continue, click OK . To cancel, click Cancel .
W004	System configuration has been changed. The input configuration and data will be initialized. Continue?	If you change the system configuration, the displayed setup data will be initialized. To continue changing, click OK . To cancel, click Cancel .
W005	Overwrite the file?	Confirmation for overwriting a file with the same name. To continue, click OK . To cancel, click Cancel .
W006	Start recording.	Recording start confirmation. To continue, click OK . To cancel, click Cancel .
W007	Stop recording.	Recording stop confirmation. To continue, click OK . To cancel, click Cancel .
W008	Start computing.	Computing start confirmation. To continue, click OK . To cancel, click Cancel .
W009	Stop computing.	Computing stop confirmation. To continue, click OK . To cancel, click Cancel .
W010	Initialize current settings.	Initialization confirmation. To continue, click OK . To cancel, click Cancel .
W011	Failed to store any settings.	Some of the setup data have not been applied to the recorder due to differences in the system configuration. Check the system settings.
W012	Number of channels is over the maximum value.	The module configuration setting exceeds the maximum number of channels. Check the modules and the maximum number of channels, and reconfigure.
W013	Failed to set any settings.	Some of the setup data have not been applied to the software. Check the system configuration or user level.
W014	Permission denied.	You do not have permission to send settings. Increase the user level, or grant permissions to allow it.
W015	All extended units settings will be discarded. OK?	This message appears when in system configuration, an IO expansion module of the GX/GP is changed from specified to not specified. To proceed with the change, click OK.
W016	Exceed the module limit.	In the system configuration, the unit and module configuration or the number of channels is exceeding the upper limit. Check the number of modules or channels specified by the auxiliary message, which is described in a separate table.
W017	Reconfigure modules ?	This message appears when you try to perform reconfiguration.

5.1 Errors and Messages

Code	Message	Description and Corrective Action
W018	Chattering filter may not function. Please update module to R1.04.01 or later.	This message appears in the pulse input setting of the GX/GP with DI module. The module version R1.04.01 or later is the supported version for the pulse input. Check the version of DI module on a GX/GP.
W019	Layout may be displayed incorrectly in case of zoom is not 100%.	If this message appears when you start the software, click OK. Then, on the View menu of IE, click Zoom (or Change the zoom level at the lower right of the window) to select 100%. Press F5 key or restart the software to refresh the screen.

W016 Auxiliary Messages

Depending on the condition, warning W016 is accompanied by an auxiliary message from the following table. (The number shown in the No. column is not displayed.)

No.	Message	Description and Corrective Action
1	Exceeded the number of IO modules which can be set.	The total number of IO modules installed in the entire system (Main unit tab and Extended Unit tab) exceeds the upper limit. Check the number of IO modules specified under Module.
2	Exceeded the number of DO modules which can be set.	The total number of DO/DIO modules installed in the entire system (Main unit tab and Extended Unit tab) exceeds the upper limit. Check the number of DO/DIO modules specified under Module.
3	Exceeded the number of IO channels which can be set.	The total number of channels of the IO modules installed in the entire system (Main unit tab and Extended Unit tab) exceeds the upper limit. Check the number of channels of IO modules specified under Module.
4	Exceeded the number of IO expansion modules which can be set.	This message appears in relation to GM module settings. There are multiple IO expansion modules selected under Module on the Main unit tab. Set only a single IO expansion module in the range ID = 0 to 6. Or, under Module on the Main unit tab, there is a module selected after the IO expansion module. Other modules cannot be set after the IO expansion module.
5	Exceeded the number of EMR modules which can be set.	This message appears in relation to GM module settings. There are 9 or 10 IO modules including an EMR module selected under Module on the Main unit tab. When an EMR is installed, only up to eight IO modules (including the EMR) can be installed.
6	Exceeded the number of DIO modules which can be set.	In the entire system (Main unit tab and Extended Unit tab), there is a unit in which multiple DIO modules are installed. Check the number of DIO modules in each unit.

Error Messages

Code	Message	Description and Corrective Action
E001	Communication error occurred.	Communication error occurred with the recorder. Check communication parameters, network cables, and settings on the recorder.
E002	Failed to save the file.	Failed to save the file. Check the folder and file properties.
E003	Failed to read the file.	Failed to open the file. Check the file name.
E004	Internet Explorer is not installed.	Internet Explorer is not installed. Install Internet Explorer.
E005	Now recording. Can't store settings.	Execution is not possible during recording. Try again after stopping the recording.
E006	Now computing. Can't store settings.	Execution is not possible during computing. Try again after stopping the computation.
E007	The file is read-only.	Attempting to save to a read-only file. Make the file writable, or save to a different file.
E008	Access to the file is denied.	Check the access privileges to the file. Check whether the file system limit has been exceeded.
E009	The disk is full.	Check the free space in the save destination.
E010	The directory is full.	Check the number of files in the save destination.
E011	The file is invalid.	A file format error.
E012	Sharing violation occurred.	The file is already opened in another application. Close the file.
E013	Error occurred.	An error other than those above (001 to 012) occurred.
E014	The directory does not exist.	The directory may have been deleted.
E015	PDF file reader is not installed.	Install Adobe Reader.

Code	Message	Description and Corrective Action
E016	The directory already exists.	Check whether the path and folder name have been specified correctly.
E017	Bad file path is specified.	The file path length has exceeded the limit (256 characters), or an invalid character has been used. Shorten the file path, or correct the file name.
E018	Failed to open program files.	This error occurs when a browser other than the browser started by this software was used to access the software, or Internet Explorer was refreshed consecutively. Close all browsers, and restart Hardware Configurator.
E019	Please delete temporary internet files from the browser, close the browser and restart the application.	This error occurs when temporary internet files affect the software. Delete temporary files in Internet Explorer, then restart Hardware Configurator.
E020	Login inputs are incorrect.	Enter a valid user name and password in the communication condition dialog box. Enter the User ID only on devices whose /AS function is enabled. There is no need to enter it on devices whose /AS function is disabled or those that do not have the function. If the GX/GP firmware version is R1.xx.xx, this message appears when the user logged in changes his or her own user information and sends it or when the user sends setup data that changes the "Security setting > basic settings > communication" setting on the GX/GP from Off to Login. In these cases, resend the command with the new valid user name and password.
E021	This function is not possible at this time.	The following conditions may be causing the message to be displayed. <ul style="list-style-type: none"> • The main unit does not have the optional function required for the operation. • The main unit is sending or receiving settings or is in a condition in which the operation cannot be executed (e.g., recording or computation in progress). (Operation limitations depending on the main unit conditions: page 3-17) • The GX/GP advanced security function is enabled, the Touch operation is set to Login, and communication is set to Off. • The user does not have permission to perform the main unit operation.
E022	Failed to open due to difference in system configuration.	You are trying to use Read comparison source to open a file whose system configuration is different from the settings that are currently displayed. Differences can be shown only when the system configurations match. Select a file whose system configuration matches the settings that are currently displayed.
E023	Failed to overwrite due to advanced security file.	An advanced security file with the same name already exists. Save to a different name, or delete the file first before saving.
E024	Cannot execute. Hardware reconfiguration in progress.	Sending and receiving settings and operating the main unit are not possible on a GM that is reconfiguring.
E025	This operation is not permitted in this mode.	Sending and receiving settings and operating the main unit are not possible when the main unit is in a mode that does not allow normal operation (such as A/D calibration, Encryption, and Update.) Wait until the main unit returns to normal operation mode. If you need to force the main unit back to normal operation mode, follow the procedure below. However, note that if another user is operating through the Web application, for example, the operation results may be disposed because the operation will be terminated. <ul style="list-style-type: none"> • If a Web connection can be established with the main unit, return the main unit to normal operation mode using the Web application. • If a Web connection cannot be established with the main unit, restart the main unit. (Start in normal operation mode.)
E026	Cannot execute to GX/GP.	Reconfigure a GX/GP from the main unit screen.

Blank

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